QUALITY CONTROL SUMMARY REPORT

Second Quarter 2008
Monitoring Well Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

Prepared for

U.S. Army Corps of Engineers
Kansas City Districts

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1.0 INTRODUCTION

Monitoring well sampling was conducted by ECC as contracted by the United States Army Corps of Engineers (USACE), Kansas City District between March 12, 2008 and April 15, 2008 at the former Nebraska Ordnance Plant, near Mead, Nebraska. ECC performed all sampling activities in accordance with the Field Sampling Plan and Quality Assurance Project Plan (QAPP) of the *Work Plan and Sampling and Analysis Plan for Groundwater Monitoring Well Sampling* (ECC, 2006). This Quality Control Summary Report presents a summary of the chemical data quality review for the second quarter 2008 monitoring well sampling event.

Samples were analyzed for one or both of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B
- Explosives by EPA Method 8330

All analyses were performed by TestAmerica of South Burlington, Vermont.

Table 1-1 presents the monitoring wells planned for sample collection, the corresponding sample identifications (IDs), and the required analyses for the second quarter 2008 monitoring well sampling event. The Chain of Custody Records (COCs) and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers and drinking water standards. Appendix D contains a compact disc (CD) with all analytical data, including summary forms and raw data, for the second quarter 2008 monitoring well sampling event.

2.0 FIELD SAMPLING ACTIVITIES

Samples from 10 wells were collected during the second quarter 2008 MW sampling event. Seven of these wells were sampled for VOCs and all ten wells were sampled for explosives. One VOC field duplicate sample, two matrix spike (MS)/matrix spike duplicate (MSD) pairs, three rinsate blanks, and two trip blanks were collected.

Sample BAZE-MW-001-032008 is from location BAZE IW-01 rather than BAZE MW-001. The original sample label contained the prefix MW not IW.

Table 2-1 provides the following sample collection information:

- QC split sample information;
- MS/MSD sample information;
- A cross-reference between laboratory sample IDs and field sample IDs;
- Sample delivery group (SDG) numbers;
- COC numbers;
- Dates of sample collection and sample receipt by the laboratory; and
- Requested analyses.

3.0 ANALYTICAL RESULTS

The analytical results are presented in Table 3-1 (VOCs) and Table 3-2 (explosives). Detections are presented in Table 3-3 (VOCs) and Table 3-4 (explosives). Field duplicate results are presented in Table 3-5 (VOCs). Trip blank results are presented in Table 3-6 and rinsate blank results are presented in Table 3-7. The data in Tables 3-1 through 3-7 are presented by field sample ID, as listed in Table 1-1.

4.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present results of the data quality evaluation. This evaluation was performed in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007) and the *CENWK-EC-EF Data Quality Evaluation Guidance* (USACE, 2001). Qualifiers were assigned based on laboratory QC criteria. Data quality evaluation results are presented in Table 4-1 according to field sample ID. QC outliers for VOC analyses are presented in Table 4-2 and QC outliers for explosives analyses are presented in Table 4-3.

4.1 Sample Receipt at the Laboratory

All sample transfer requirements were met for samples received at the laboratory with the exceptions discussed below. The samples were received at the laboratory properly preserved and on ice and within 4 ± 2 °C, with the exception of two coolers that were received below 2 °C. In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), no action was required for cooler temperatures (unless frozen) less than 2 °C.

One of the vials for the rinsate blank (RIN-KM1-042008) was received with air bubbles. It is assumed that the laboratory utilized the sample vials without air bubbles for the sample analyses.

One of the two bottles for samples PZ-001-042008, PZ-002-042008, and RIN-003-042008 was received broken. Sufficient sample remained to complete these analyses and it was assumed that the laboratory used the other unbroken bottles for explosive analyses of these samples.

4.2 Holding Times

All samples were extracted and analyzed within method-specific holding times.

4.3 Tuning and Calibration

According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), assessment of tune and calibration information is assessed using the laboratory case-narrative or summary forms. No deviations from method or Laboratory Quality Management Plan (LQMP) specifications for the calibration and tuning of pertinent instrumentation were reported by the laboratory in the project-specific case narrative with the exceptions noted below.

A laboratory case narrative indicated that the response for 4-nitrotoluene was low in the continuing calibration standard analyzed on March 19 at 1853 on the confirmation column. Evaluation of the Form 7 indicated that the %D for 4-nitrotoluene exceeded 15%. According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detects and non-detects are qualified as estimated if the %D exceeds 15%. However, this continuing calibration was only associated with confirmation analyses and the non-detected results for 4-nitrotoluene were reported from the quantitation column and did not require confirmation. Therefore no action was required.

Evaluation of the continuing calibration summary Form 7s indicated that the %D for acetone at 35% exceeded 25%, but was less than 50% in the April 21, 2008 continuing calibration. According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007) detections are qualified as estimated (J) if the %D exceeds 25%. No action is required for non-detected results. Therefore, the following detected result was qualified as estimated (J):

- Acetone in sample RIN-KM1-042008

No action was required for the associated non-detected results. See Table 4-2 for the VOC calibration outliers that resulted in sample qualification.

4.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank. For common laboratory contaminants, detections are qualified as non-detect (U) if the concentration in the sample is less than 10 times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

Naphthalene was detected in a VOC method blank. No action was required because this compound was not detected in the associated samples.

4.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than five times the concentration in the associated blank (ten time for common laboratory contaminants). Sample results that are either non-detect (U), or greater than five or ten times the blank result do not require qualification.

Trip blanks were included with all shipments that contained VOCs. There were no detections of target analytes in the VOC trip blanks.

Trip blank results are summarized in Table 3-6.

4.6 Rinsate Blanks

A rinsate blank is a sample of analyte-free rinse water that is poured over decontaminated field sampling equipment prior to further sample collection. Rinsate blanks identify potential contamination introduced during the sample collection process. In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than five times the concentration in the associated blank (ten time for common laboratory contaminants). Sample results that are either non-detect (U), or greater than five or ten times the blank result do not require qualification.

Acetone and methylene chloride were detected in the rinsate blank, RIN-KM1-042008 and acetone and tetryl were detected in the rinsate blank RIN-003-042008. However, no action was required because these compounds were not detected in the associated field samples.

Rinsate blank results are summarized in Table 3-7.

4.7 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample.

The % RECs for the surrogate compound 1,2-dinitrobenzene on the confirmation column in explosive samples BAZE-MW-001-032008 and KM-003-042008 were outside the laboratory QC limits. However, no action is required as all results were reported from the primary column.

All remaining % RECs were within laboratory QC limits.

4.8 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

The LCS/LCSD RPD for acetone at 50% exceeded 30% for the VOC LCS analyses for QC batch LB042108. As a result of this QC outlier, the following results were qualified as estimated (J/UJ):

- Acetone in samples KM-001-042008, KM-002-042008, KM-003-042008, RIN-KM1-042008, and TRB-201-042008

The LCS % RECs for vinyl chloride and 2-butanone exceeded the QC limits for the VOC LCS analysis for QC batch LA041808. No action was required because these compounds were not detected in the associated samples.

Table 4-2 presents the VOC QC outliers and associated samples for all assigned qualifiers.

4.9 Matrix Spike / Matrix Spike Duplicate

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the un-spiked portion of the sample for % REC of the spiked analytes. MS/MSD analyses were performed on the appropriate samples collected, see Table 2- 1. Several additional MS/MSD analyses were performed by the laboratory.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects.

The % REC for 1,1,1-trichloroethane at 120% exceeded the QC limit of 80-115% for the MS analysis of sample PZ-003-042008. Although this compound was not detected in the un-spiked parent sample, 1,1,1-trichloroethane was detected in the associated field duplicate sample PZ-203-042008. Therefore the following detected sample result was qualified as estimated (J).

- 1,1,1-Trichloroethane in sample PZ-203-042008

The MS or MSD % RECs for several additional compounds were greater than the laboratory QC limits. However, no action was required because all other results for these compounds were non-detects in the associated parent samples. Table 4-2 presents the VOCs QC outliers and associated samples for all assigned qualifiers.

4.10 Field Duplicates

Field duplicates provide information regarding the reproducibility of analytical results and account for error introduced from handling, shipping, preparing, and analyzing field samples. The following field duplicate pair was collected during the second quarter 2008 monitoring well sampling event:

- PZ-003-042008 / PZ-203-042008 (VOC)

In accordance with the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001) and the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), data are not qualified based on field duplicate sample results. Results within a factor of two of each other were considered to be in agreement. Results between a factor of two to three of each other were considered a minor discrepancy, and results greater than a factor of three were considered a major discrepancy.

All field duplicate results were within a factor of two of each other. It should be noted that 1,1,1-trichloroethane was detected in sample PZ-203-042008, but not in sample PZ-003-042008. The data is considered acceptable as the detected result was at a concentration less than the reporting limit.

Field duplicate results are presented in Table 3-5 (VOCs).

4.11 Dilutions and Re-analyses

Qualifiers assigned as a result of calibration range exceedance are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

The following samples required a diluted analysis due to analyte concentrations above the calibration range:

- BAZE-MW-007-032008 – RDX
- BAZE-MW-011-032008 – RDX

The original sample results for RDX were flagged "E" by the laboratory as exceeding the calibration range and are considered estimated values. According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results exceeding the calibrations range are not to used for reporting or project decisions when acceptable results from dilutions are available. Therefore the diluted concentrations should be used for RDX and the original undiluted analysis should be used for all other sample results for these two samples. The diluted results other than the results for RDX are not used for these samples.

No qualifiers were assigned as a result of exceeded calibration ranges because acceptable results from diluted sample analyses were provided.

4.12 Other QC Parameters

A column comparison between the detected explosive results was made using explosive identification summary forms. The validator confirmed all reported explosives detections and column RPDs. The following results had RPDs greater than 40% and the results were qualified as estimated (J):

- 1,3-Dinitrobenzene in samples BAZE-MW-007-032008 and BAZE-MW-011-032008
- 2-Amino-4,6-dinitrotoluene in sample BAZE-MW-001-032008
- 2,4,6-Trinitrotoluene in sample BAZE-MW-011-032008
- 4-Amino-2,6-dinitrotoluene in samples BAZE-MW-001-032008, KM-003-042008 and PZ-001-042008
- Nitrobenzene in sample BAZE-MW-001-032008

Table 4-3 presents the explosives QC outliers and associated samples.

These qualifiers were not used to determine analytical completeness or project completeness (Section 5.0).

4.13 Laboratory Qualifiers

Analytes detected below the quantitation limit or reporting limit, but above the lowest level of detection were quantified and results were assigned an estimated (J) qualifier by the laboratory. These qualifiers were carried over by the validator and were not used to determine analytical completeness or project completeness (Section 5.0).

5.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the second quarter 2008 monitoring well sampling event. All completeness goals were established in the QAPP (ECC, 2006).

5.1 Field Completeness

Field completeness for sample collection is assessed by comparing the number of samples collected to the number of samples planned for collection. Field completeness for the VOCs is 100% and although location BAZE IW-01 was mistakenly collected rather than BAZE MW-01 for the explosives analyses, field completeness for the explosives is also considered to be 100%. The overall field completeness percentage is 100%. All field completeness percentages exceed the field completeness goal of 95%. Section 2.0 presents the field sampling activities, including any deviations from planned sampling if applicable. Table 5-1 presents field completeness values.

5.2 Analytical Completeness

Analytical completeness is calculated as both acceptable data completeness and quality data completeness.

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that have not been rejected or qualified as estimated (J). Qualified data are considered acceptable if appropriate corrective actions were taken by the laboratory. Acceptable data completeness percentages for VOCs (99%) and explosives (100%) exceeded the acceptable data completeness goals for each analytical method of 90%. The overall acceptable data completeness (99%) also exceeds the overall acceptable data completeness goal of 95%.

Quality data is a measure of the percentage of usable data points. Usable data points include all non-rejected data. Rejected data points with replacement data do not count against quality data completeness. The quality data completeness percentage for VOCs and explosives, considered separately, is 100%. The overall quality data completeness percentage is therefore 100%, which exceeds the quality data completeness goal of 80%. Table 5-2 presents analytical data completeness values.

5.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the project as a whole. Project completeness is assessed by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/measurements planned. Project completeness is calculated using field completeness and analytical completeness (quality data) percentages. Analytical completeness for the sampling event was 100% and field completeness was also 100%. The overall project completeness was 100%. Table 5-3 presents project completeness values.

6.0 CONCLUSIONS

No data points were qualified as rejected (R). Data are valid for use, as qualified. Overall field completeness is 100%, acceptable data completeness is 99%, and the quality data completeness is 100%. The overall project completeness is 100%. All exceeded the established goals.

7.0 REFERENCES

ECC, 2006, *Work Plan and Sampling and Analysis Plan for Groundwater Monitoring Well Sampling*, Part I - Work Plan, Part II - Field Sampling Plan, Part III - Quality Assurance Project Plan, June.

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007).

USACE, 2001, *CENWK-EC-EF Data Quality Evaluation Guidance*, July.

Tables

Table 1-1
Sampling Locations
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Monitoring Wells	Sample Identifications	Analyses[1]
BAZE-IW-01[2]	BAZE-MW-001-032008	Explosives
BAZE-MW-007	BAZE-MW-007-032008	Explosives
BAZE-MW-011	BAZE-MW-011-032008	Explosives
KM-001	KM-001-042008	Explosives, Volatiles
KM-002	KM-002-042008	Explosives, Volatiles
KM-003	KM-003-042008	Explosives, Volatiles
PZ-001	PZ-001-042008	Explosives, Volatiles
PZ-002	PZ-002-042008	Explosives, Volatiles
PZ-003	PZ-003-042008	Explosives, Volatiles
PZ-004	PZ-004-042008	Explosives, Volatiles

Notes:

[1] = Explosives by EPA Method 8330 and Volatiles by EPA Method 8260

[2] = Location IW-01 rather than MW-001 was mistakenly collected. However, the sample was labeled as BAZE-MW-001-032008

Table 2-1
Sample Collection Summary
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	Quality Control Samples	MS/MSD Samples	Date Sampled	Date Received by Laboratory	COC ID	Laboratory ID	SDG	Analyses	
								VOCs	Explosives
Field Samples									
BAZE-MW-001-032008			3/12/2008	3/13/2008	None	743127	124498		•
BAZE-MW-007-032008			3/12/2008	3/13/2008	None	743128	124498		•
BAZE-MW-011-032008			3/12/2008	3/13/2008	None	743129	124498		•
KM-001-042008			4/15/2008	4/16/2008	None	748938	125022	•	•
KM-002-042008			4/15/2008	4/16/2008	None	748942	125022	•	•
		KM-002-042008MS	4/15/2008	4/16/2008	None	748942MS	125022		•
		KM-002-042008MSD	4/15/2008	4/16/2008	None	748942MD	125022		•
KM-003-042008			4/15/2008	4/16/2008	None	748940	125022	•	•
PZ-001-042008			4/9/2008	4/11/2008	None	748294	124931	•	•
PZ-002-042008			4/9/2008	4/11/2008	None	748293	124931	•	•
PZ-003-042008			4/9/2008	4/11/2008	None	748289	124931	•	•
		PZ-003-042008MS	4/9/2008	4/11/2008	None	748289MS	124931	•	
		PZ-003-042008MSD	4/9/2008	4/11/2008	None	748289MD	124931	•	
	PZ-203-042008		4/9/2008	4/11/2008	None	748290	124931	•	
PZ-004-042008			4/9/2008	4/11/2008	None	748292	124931	•	•
Rinsate Blanks									
RIN-001-032008			3/12/2008	3/13/2008	None	743126	124498		•
RIN-003-042008			4/9/2008	4/11/2008	None	748295	124931	•	•
RIN-KM1-042008			4/15/2008	4/16/2008	None	748941	125022	•	•
Trip Blanks									
TRB-201-042008			4/15/2008	4/16/2008	None	748939	125022	•	
TRB-203-042008			4/9/2008	4/11/2008	None	748291	124931	•	

Notes:

• = Requested for the indicated analyses.
COC = Chain of Custody Record
ID = Identification
Lab = Laboratory
MS/MSD = Matrix Spike / Matrix Spike Duplicate
SDG = Sample Delivery Group
VOCs = Volatile Organic Compounds

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		KM-001	KM-002	KM-003	PZ-001	PZ-002	PZ-003
Field Sample ID:		KM-001-042008	KM-002-042008	KM-003-042008	PZ-001-042008	PZ-002-042008	PZ-003-042008
Lab Sample ID:		748938	748942	748940	748294	748293	748289
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		4/15/2008	4/15/2008	4/15/2008	4/9/2008	4/9/2008	4/9/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 J
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	1.1	1 U	0.79 J	1 U	1 U	0.77 J
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		KM-001	KM-002	KM-003	PZ-001	PZ-002	PZ-003
Field Sample ID:		KM-001-042008	KM-002-042008	KM-003-042008	PZ-001-042008	PZ-002-042008	PZ-003-042008
Lab Sample ID:		748938	748942	748940	748294	748293	748289
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		4/15/2008	4/15/2008	4/15/2008	4/9/2008	4/9/2008	4/9/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/l	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	1.9	1 U	0.47 J	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1.1	1 U	0.79 J	1 U	1 U	0.77 J
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

	Station ID:	KM-001	KM-002	KM-003	PZ-001	PZ-002	PZ-003
	Field Sample ID:	KM-001-042008	KM-002-042008	KM-003-042008	PZ-001-042008	PZ-002-042008	PZ-003-042008
	Lab Sample ID:	748938	748942	748940	748294	748293	748289
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	4/15/2008	4/15/2008	4/15/2008	4/9/2008	4/9/2008	4/9/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	20	1.0	25	14	1 U	8.9
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		PZ-003	PZ-004
Field Sample ID:		PZ-203-042008	PZ-004-042008
Lab Sample ID:		748290	748292
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/9/2008
Field QC:		Field Duplicate	Original Sample
Analysis Information:		I 1	I 1
VOCs	**Units**		
1,1-Dichloroethane	ug/l	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U
1,1,1-Trichloroethane	ug/l	0.21 J	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U
1,2-Dichloroethene	ug/l	0.85 J	1 U
1,2-Dichloropropane	ug/l	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U
2-Butanone	ug/l	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U
2-Hexanone	ug/l	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		PZ-003	PZ-004
Field Sample ID:		PZ-203-042008	PZ-004-042008
Lab Sample ID:		748290	748292
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/9/2008
Field QC:		Field Duplicate	Original Sample
Analysis Information:		I 1	I 1
VOCs	**Units**		
4-Methyl-2-pentanone	ug/l	5 U	5 U
Acetone	ug/l	5 U	5 U
Benzene	ug/l	1 U	1 U
Bromobenzene	ug/l	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U
Bromoform	ug/l	1 U	1 U
Bromomethane	ug/l	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U
Chloroethane	ug/l	1 U	1 U
Chloroform	ug/l	1 U	1 U
Chloromethane	ug/l	1 U	1 U
cis-1,2-Dichloroethene	ug/l	0.85 J	1 U
cis-1,3-Dichloropropene	ug/l	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U
Dibromomethane	ug/l	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U
Methylene chloride	ug/l	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U
Naphthalene	ug/l	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		PZ-003	PZ-004
Field Sample ID:		PZ-203-042008	PZ-004-042008
Lab Sample ID:		748290	748292
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/9/2008
Field QC:		Field Duplicate	Original Sample
Analysis Information:		I 1	I 1
VOCs	**Units**		
n-Butylbenzene	ug/l	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U
o-Xylene	ug/l	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U
Styrene	ug/l	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U
Toluene	ug/l	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U
Trichloroethene	ug/l	9.1	0.27 J
Trichlorofluoromethane	ug/l	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		BAZE-IW-001	BAZE-MW-007	BAZE-MW-007	BAZE-MW-011	BAZE-MW-011	KM-001
Field Sample ID:		BAZE-MW-001-032008	BAZE-MW-007-032008	BAZE-MW-007-032008	BAZE-MW-011-032008	BAZE-MW-011-032008	KM-001-042008
Lab Sample ID:		743127R1	743128R1	743128R1D1	743129R1	743129R1D1	748938
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		3/12/2008	3/12/2008	3/12/2008	3/12/2008	3/12/2008	4/15/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	DL 4	I 1	DL 4	I 1
Explosives	**Units**						
1,3-Dinitrobenzene	ug/l	0.25 U	0.083 J		1.5 J		0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U		0.25 U		0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.048 J	0.25 U		0.16 J		0.026 J
2-Nitrotoluene	ug/l	0.25 U	0.25 U		0.25 U		0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U		0.25 U		0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U		0.18 J		0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U		0.25 U		0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U		0.25 U		0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.16 J	0.066 J		0.43		0.27
4-Nitrotoluene	ug/l	0.25 U	0.25 U		0.25 U		0.25 U
HMX	ug/l	2.1	14		4.6		0.61
Nitrobenzene	ug/l	0.69 J	0.25 U		0.25 U		0.25 U
RDX	ug/l	13		49		50	6.5
Tetryl	ug/l	0.25 U	0.25 U		0.25 U		0.25 U

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		KM-002	KM-003	PZ-001	PZ-002	PZ-003	PZ-004
Field Sample ID:		KM-002-042008	KM-003-042008	PZ-001-042008	PZ-002-042008	PZ-003-042008	PZ-004-042008
Lab Sample ID:		748942	748940	748294	748293	748289	748292
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		4/15/2008	4/15/2008	4/9/2008	4/9/2008	4/9/2008	4/9/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
Explosives	**Units**						
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.12 J	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.25 U	0.15 J	0.039 J	0.25 U	1.0	0.25 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	ug/l	0.25 U	0.16 J	0.24 J	0.25 U	1.5	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	ug/l	0.25 U	2.9	3.0	0.72	12	0.25 U
Tetryl	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 3
Detections - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

	Station ID:	KM-001	KM-002	KM-003	PZ-001	PZ-003	PZ-003
	Field Sample ID:	KM-001-042008	KM-002-042008	KM-003-042008	PZ-001-042008	PZ-003-042008	PZ-203-042008
	Lab Sample ID:	748938	748942	748940	748294	748289	748290
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	4/15/2008	4/15/2008	4/15/2008	4/9/2008	4/9/2008	4/9/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1,1-Trichloroethane	ug/l						0.21 J
1,1,2-Trichloroethane	ug/l					1 J	
1,2-Dichloroethene	ug/l	1.1		0.79 J		0.77 J	0.85 J
Chloroform	ug/l	1.9		0.47 J			
cis-1,2-Dichloroethene	ug/l	1.1		0.79 J		0.77 J	0.85 J
Trichloroethene	ug/l	20	1.0	25	14	8.9	9.1

Table 3 - 3
Detections - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:	PZ-004
Field Sample ID:	PZ-004-042008
Lab Sample ID:	748292
Lab Name:	TALVT
Sample Date:	4/9/2008
Field QC:	Original Sample
Analysis Information:	I 1

VOCs	Units	
1,1,1-Trichloroethane	ug/l	
1,1,2-Trichloroethane	ug/l	
1,2-Dichloroethene	ug/l	
Chloroform	ug/l	
cis-1,2-Dichloroethene	ug/l	
Trichloroethene	ug/l	0.27 J

Table 3 - 3
Detections - Volatile Organic Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 4
Detections - Explosive Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		BAZE-IW-001	BAZE-MW-007	BAZE-MW-007	BAZE-MW-011	BAZE-MW-011	KM-001
Field Sample ID:		BAZE-MW-001-032008	BAZE-MW-007-032008	BAZE-MW-007-032008	BAZE-MW-011-032008	BAZE-MW-011-032008	KM-001-042008
Lab Sample ID:		743127R1	743128R1	743128R1D1	743129R1	743129R1D1	748938
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		3/12/2008	3/12/2008	3/12/2008	3/12/2008	3/12/2008	4/15/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	DL 4	I 1	DL 4	I 1
Explosives	**Units**						
1,3-Dinitrobenzene	ug/l		0.083 J		1.5 J		
2-Amino-4,6-Dinitrotoluene	ug/l	0.048 J			0.16 J		0.026 J
2,4,6-Trinitrotoluene	ug/l				0.18 J		
4-Amino-2,6-Dinitrotoluene	ug/l	0.16 J	0.066 J		0.43		0.27
HMX	ug/l	2.1	14		4.6		0.61
Nitrobenzene	ug/l	0.69 J					
RDX	ug/l	13		49		50	6.5

Table 3 - 4
Detections - Explosive Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		KM-003	PZ-001	PZ-002	PZ-003
Field Sample ID:		KM-003-042008	PZ-001-042008	PZ-002-042008	PZ-003-042008
Lab Sample ID:		748940	748294	748293	748289
Lab Name:		TALVT	TALVT	TALVT	TALVT
Sample Date:		4/15/2008	4/9/2008	4/9/2008	4/9/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1
Explosives	**Units**				
1,3-Dinitrobenzene	ug/l				
2-Amino-4,6-Dinitrotoluene	ug/l				0.12 J
2,4,6-Trinitrotoluene	ug/l				
4-Amino-2,6-Dinitrotoluene	ug/l	0.15 J	0.039 J		1.0
HMX	ug/l	0.16 J	0.24 J		1.5
Nitrobenzene	ug/l				
RDX	ug/l	2.9	3.0	0.72	12

Table 3 - 4
Detections - Explosive Compounds
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 5
Field Duplicate Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		PZ-003	PZ-003
Field Sample ID:		PZ-003-042008	PZ-203-042008
Lab Sample ID:		748289	748290
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/9/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
1,1-Dichloroethane	ug/l	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	0.21 J
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 J	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U
1,2-Dichloroethene	ug/l	0.77 J	0.85 J
1,2-Dichloropropane	ug/l	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U
2-Butanone	ug/l	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U
2-Hexanone	ug/l	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U

Table 3 - 5
Field Duplicate Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		PZ-003	PZ-003
Field Sample ID:		PZ-003-042008	PZ-203-042008
Lab Sample ID:		748289	748290
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/9/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
4-Methyl-2-pentanone	ug/l	5 U	5 U
Acetone	ug/l	5 U	5 U
Benzene	ug/l	1 U	1 U
Bromobenzene	ug/l	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U
Bromoform	ug/l	1 U	1 U
Bromomethane	ug/l	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U
Chloroethane	ug/l	1 U	1 U
Chloroform	ug/l	1 U	1 U
Chloromethane	ug/l	1 U	1 U
cis-1,2-Dichloroethene	ug/l	0.77 J	0.85 J
cis-1,3-Dichloropropene	ug/l	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U
Dibromomethane	ug/l	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U
Methylene chloride	ug/l	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U
Naphthalene	ug/l	1 U	1 U

Table 3 - 5
Field Duplicate Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		PZ-003	PZ-003
Field Sample ID:		PZ-003-042008	PZ-203-042008
Lab Sample ID:		748289	748290
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/9/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
n-Butylbenzene	ug/l	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U
o-Xylene	ug/l	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U
Styrene	ug/l	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U
Toluene	ug/l	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U
Trichloroethene	ug/l	8.9	9.1
Trichlorofluoromethane	ug/l	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U

Table 3 - 5
Field Duplicate Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 6
Trip Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		Trip Blank	Trip Blank
Field Sample ID:		TRB-203-042008	TRB-201-042008
Lab Sample ID:		748291	748939
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/15/2008
Field QC:		Trip Blank	Trip Blank
Analysis Information:		I 1	I 1
VOCs	**Units**		
1,1-Dichloroethane	ug/l	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U
1,2-Dichloroethene	ug/l	1 U	1 U
1,2-Dichloropropane	ug/l	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U
2-Butanone	ug/l	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U
2-Hexanone	ug/l	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U

Table 3 - 6
Trip Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		Trip Blank	Trip Blank
Field Sample ID:		TRB-203-042008	TRB-201-042008
Lab Sample ID:		748291	748939
Lab Name:		TALVT	TALVT
Sample Date:		4/9/2008	4/15/2008
Field QC:		Trip Blank	Trip Blank
Analysis Information:		I 1	I 1
VOCs	**Units**		
4-Methyl-2-pentanone	ug/l	5 U	5 U
Acetone	ug/l	5 U	5 UJ
Benzene	ug/l	1 U	1 U
Bromobenzene	ug/l	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U
Bromoform	ug/l	1 U	1 U
Bromomethane	ug/l	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U
Chloroethane	ug/l	1 U	1 U
Chloroform	ug/l	1 U	1 U
Chloromethane	ug/l	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1 U	1 U
cis-1,3-Dichloropropene	ug/l	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U
Dibromomethane	ug/l	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U
Methylene chloride	ug/l	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U
Naphthalene	ug/l	1 U	1 U

Table 3 - 6
Trip Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:	Trip Blank	Trip Blank
Field Sample ID:	TRB-203-042008	TRB-201-042008
Lab Sample ID:	748291	748939
Lab Name:	TALVT	TALVT
Sample Date:	4/9/2008	4/15/2008
Field QC:	Trip Blank	Trip Blank
Analysis Information:	I 1	I 1

VOCs	**Units**		
n-Butylbenzene	ug/l	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U
o-Xylene	ug/l	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U
Styrene	ug/l	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U
Toluene	ug/l	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U
Trichloroethene	ug/l	1 U	1 U
Trichlorofluoromethane	ug/l	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U

Table 3 - 6
Trip Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 7
Rinsate Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:	Rinsate Blank	Rinsate Blank	Rinsate Blank
Field Sample ID:	RIN-001-032008	RIN-003-042008	RIN-KM1-042008
Lab Sample ID:	743126R1	748295	748941
Lab Name:	TALVT	TALVT	TALVT
Sample Date:	3/12/2008	4/9/2008	4/15/2008
Field QC:	Rinsate Blank	Rinsate Blank	Rinsate Blank
Analysis Information:	I 1	I 1	I 1
VOCs	**Units**		
1,1-Dichloroethane	ug/l	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U
1,2-Dichloroethene	ug/l	1 U	1 U
1,2-Dichloropropane	ug/l	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U
2-Butanone	ug/l	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U
2-Hexanone	ug/l	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U

Table 3 - 7
Rinsate Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:	Rinsate Blank	Rinsate Blank	Rinsate Blank
Field Sample ID:	RIN-001-032008	RIN-003-042008	RIN-KM1-042008
Lab Sample ID:	743126R1	748295	748941
Lab Name:	TALVT	TALVT	TALVT
Sample Date:	3/12/2008	4/9/2008	4/15/2008
Field QC:	Rinsate Blank	Rinsate Blank	Rinsate Blank
Analysis Information:	I 1	I 1	I 1
VOCs	**Units**		
4-Methyl-2-pentanone	ug/l	5 U	5 U
Acetone	ug/l	4.3 J	3.5 J
Benzene	ug/l	1 U	1 U
Bromobenzene	ug/l	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U
Bromoform	ug/l	1 U	1 U
Bromomethane	ug/l	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U
Chloroethane	ug/l	1 U	1 U
Chloroform	ug/l	1 U	1 U
Chloromethane	ug/l	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1 U	1 U
cis-1,3-Dichloropropene	ug/l	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U
Dibromomethane	ug/l	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U
Methylene chloride	ug/l	1 U	0.51 J
m,p-Xylene	ug/l	1 U	1 U
Naphthalene	ug/l	1 U	1 U

Table 3 - 7
Rinsate Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		Rinsate Blank	Rinsate Blank	Rinsate Blank
Field Sample ID:		RIN-001-032008	RIN-003-042008	RIN-KM1-042008
Lab Sample ID:		743126R1	748295	748941
Lab Name:		TALVT	TALVT	TALVT
Sample Date:		3/12/2008	4/9/2008	4/15/2008
Field QC:		Rinsate Blank	Rinsate Blank	Rinsate Blank
Analysis Information:		I 1	I 1	I 1
VOCs	**Units**			
n-Butylbenzene	ug/l		1 U	1 U
n-Propylbenzene	ug/l		1 U	1 U
o-Xylene	ug/l		1 U	1 U
sec-Butylbenzene	ug/l		1 U	1 U
Styrene	ug/l		1 U	1 U
tert-Butylbenzene	ug/l		1 U	1 U
Tetrachloroethene	ug/l		1 U	1 U
Toluene	ug/l		1 U	1 U
trans-1,2-Dichloroethene	ug/l		1 U	1 U
trans-1,3-Dichloropropene	ug/l		1 U	1 U
Trichloroethene	ug/l		1 U	1 U
Trichlorofluoromethane	ug/l		1 U	1 U
Vinyl chloride	ug/l		1 U	1 U
Xylene (Total)	ug/l		1 U	1 U
Explosives	**Units**			
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U

Table 3 - 7
Rinsate Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Monitoring Wells

Station ID:		Rinsate Blank	Rinsate Blank	Rinsate Blank
Field Sample ID:		RIN-001-032008	RIN-003-042008	RIN-KM1-042008
Lab Sample ID:		743126R1	748295	748941
Lab Name:		TALVT	TALVT	TALVT
Sample Date:		3/12/2008	4/9/2008	4/15/2008
Field QC:		Rinsate Blank	Rinsate Blank	Rinsate Blank
Analysis Information:		I 1	I 1	I 1
Explosives	**Units**			
HMX	ug/l	0.25 U	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U	0.25 U
RDX	ug/l	0.25 U	0.25 U	0.25 U
Tetryl	ug/l	0.25 U	0.052 J	0.25 U

Table 3 - 7
Rinsate Blank Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 4-1
Data Quality Evaluation Results
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Laboratory Result		Data Review Qualifier	Reason for Qualification					Comments	Final Result
										CR	CAL	LCS	MS	RPD		
BAZE-MW-001-032008	3/12/2008	124498	743127	Explosives	2-Amino-4,6-dinitrotoluene	µg/L	0.048	J	J					x	Intercolumn RPD > 40%	0.048 J
					4-Amino-2,6-dinitrotoluene	µg/L	0.16	J	J					x	Intercolumn RPD > 40%	0.16 J
					Nitrobenzene	µg/L	0.69		J					x	Intercolumn RPD > 40%	0.69 J
BAZE-MW-007-032008	3/12/2008	124498	743128	Explosives	RDX	µg/L	49	E	Not used	x					Calibration Range Exceeded Report RDX from Dilution	49 Not used
					1,3-Dinitrobenzene	µg/L	0.083	J	J					x	Intercolumn RPD > 40%	0.083 J
BAZE-MW-007-032008DL	3/12/2008	124498	743128D1	Explosives	All Results Except RDX	µg/L	Various	Various	Not used	x					Report only RDX from this Analysis	49 D
BAZE-MW-011-032008	3/12/2008	124498	743129	Explosives	RDX	µg/L	50	E	Not used	x					Calibration Range Exceeded Report RDX from Dilution	50 Not used
					1,3-Dinitrobenzene	µg/L	1.5		J					x	Intercolumn RPD > 40%	1.5 J
					2,4,6-Trinitrotoluene	µg/L	0.18	J	J					x	Intercolumn RPD > 40%	0.18 J
BAZE-MW-011-032008DL	3/12/2008	124498	743129D1	Explosives	All Results Except RDX	µg/L	Various	Various	Not used	x					Report only RDX from this Analysis	50 D
KM-001-042008	4/15/2008	125022	748938	VOC	Acetone	µg/L	5.0	U	UJ			x			Elevated LCS/LCSD RPD	5 UJ
KM-002-042008	4/15/2008	125022	748942	VOC	Acetone	µg/L	5.0	U	UJ			x			Elevated LCS/LCSD RPD	5 UJ
KM-003-042008	4/15/2008	125022	748940	VOC	Acetone	µg/L	5.0	U	UJ			x			Elevated LCS/LCSD RPD	5 UJ
				Explosives	4-Amino-2,6-dinitrotoluene	µg/L	0.15	J	J					x	Intercolumn RPD > 40%	0.15 J
PZ-001-042008	4/9/2008	124931	748294	Explosives	4-Amino-2,6-dinitrotoluene	µg/L	0.039	J	J					x	Intercolumn RPD > 40%	0.039 J
PZ-203-042008	4/9/2008	124931	748290	VOC	1,1,1-Trichloroethane	µg/L	0.21	J	J				x		High MS % REC	0.21 J
RIN-KM1-042008	4/15/2008	125022	748941	VOC	Acetone	µg/L	3.5	J	J		x	x			Continuing Calibration %D >25% Elevated LCS/LCSD RPD	3.5 J
TRB-201-042008	4/15/2008	125022	748939	VOC	Acetone	µg/L	5.0	U	UJ			x			Elevated LCS/LCSD RPD	5 UJ

Notes:

CAL = Calibration
CR = Calibration Range
D1 = Dilution
E = Laboratory qualifier indicating a calibration range exceedance
J = Qualified as estimated
LCS/LCSD = Laboratory Control Sample/Laboratory Control Sample Duplicate
MS/MSD = Matrix Spike/Matrix Spike Duplicate
RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine
%D = Percent Difference
%REC = Percent Recovery
RPD = Relative Percent Difference
SDG = Sample Delivery Group
U = Qualified as non-detect
µg/L = micrograms per liter
UJ = Qualified as estimated and not detected
VOCs = Volatile organic compounds

Table 4-2
VOCs Quality Control Outliers
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Sample ID(s) Requiring Qualification	SDG	Compound	QC Outlier	QC Parameter Control Limit	QC Result
Calibrations					
RIN-KM1-042008	125022	Acetone	CCAL %D	25%	35%
Laboratory Control Sample / Laboratory Control Sample Duplicate					
KM-001-042008 KM-002-042008 KM-003-042008 RIN-KM1-042008 TRB-201-042008	125022	Acetone	LCS /LCSD RPD	30%	50%
Matrix Spike / Matrix Spike Duplicate					
PZ-203-042008	124931	1,1,1-Trichloroethane	MS % REC	80-115%	120%

Notes:

ID = Identification
CCAL = Continuing Calibration
J = Qualified as estimated
LCS/LCSD = Laboratory Control Sample/Laboratory Control Sample Duplica
MS/MSD = Matrix Spike/Matrix Spike Duplicate
%D = Percent Difference
%REC = Percent Recovery
QC = Quality Control
RPD = Relative Percent Difference
SDG = Sample Delivery Group

Table 4-3
Explosives Quality Control Outliers
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Sample ID(s) Requiring Qualification	SDG	Compound	QC Outlier	QC Parameter Control Limit	QC Result
Dilutions and Reanalyses (E flags are not used in completeness percentage when dilution available)					
BAZE-MW-007-032008	124498	RDX	Calibration Range Exceedance	Linear Calibration Range	49 E Report as 49 D
BAZE-MW-011-032008	124498	RDX	Calibration Range Exceedance	Linear Calibration Range	50 E Report as 50 D
Note: The samples above were diluted and reanalyzed. The results for RDX should be reported from the dilutions.					
Other QC (not used to determine analytical completeness or project completeness)					
BAZE-MW-001-032008	124498	2-Amino-4,6-dinitrotoluene	RPD Between Column Results	<40%	150%
BAZE-MW-001-032008	124998	4-Amino-2,6-dinitrotoluene			140%
BAZE-MW-001-032008	124498	Nitrobenzene			100%
BAZE-MW-007-032008 BAZE-MW-011-032008	124498	1,3-Dinitrobenzene			63% 110%
BAZE-MW-011-032008	124498	2,4,6-Trinitrotoluene			140%
KM-003-042008	125022	4-Amino-2,6-dinitrotoluene			42%
PZ-001-042008	124931	4-Amino-2,6-dinitrotoluene			95%

Notes:

ID = Identification
D = Result from dilution
E = Exceeds Calibration Range
QC = Quality Control
RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine
RPD = Relative Percent Difference
SDG = Sample Delivery Group

Table 5-1
Field Completeness
First Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned[1]	Number of Samples Collected[2]	Field Completeness
Volatile Organic Compounds	8	8	100%
Explosives	10	10	100%
Totals =	18	18	100%
Goal =			95%

Notes:

[1] = Number of samples includes field samples and field duplicate samples.

[2] = Location IW-01 rather than MW-001 was mistakenly collected for explosives. The overall completeness for the Explosives remains 100%.

Table 5-2
Analytical Completeness
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters[1]	Acceptable Data[2]	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data[3]	Quality Data Completeness	Quality Data Completess Goals
Volatile Organic Compounds	528	524	99%	90%	528	100%	80%
Explosives	140	140	100%	90%	140	100%	80%
Totals =	668	664	99%	95%	668	100%	80%

Notes:

[1] = Total number of parameters includes field samples and field duplicates.

[2] = Acceptable data is defined as data that passed all quality control (QC) criteria, or data that did not pass QC criteria but had appropriate corrective actions taken. Acceptable data completeness is a measure of laboratory contract compliance. R qualified data with acceptable replacement data are not counted.

[3] = Quality data is a measure of the percentage of usable data points (all non-rejected data).

Table 5-3
Project Completeness
Second Quarter 2008 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical[1]	Project Completeness[2]
100%	100%	99.5%
Project Completeness Goal =		90%

Notes:
[1] = Analytical completeness is the percentage of usable data (i.e. quality data completeness).
[2] = Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 COLE BLVD, BLDG 21 SU 350 LAKEWOOD, CO 80401	Address:
Contact: DAVID DANDER	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote: MEAD FMOP 5403.001	

Sampler's Name: ~~TOBY HINZ~~ ERIK WAISS

Sampler's Signature:

Proj. No.: 5403.001

Project Name: MEAD FMOP

No/Type of Containers²: ICE

ANALYSIS REQUESTED: 8330 EXPL (ICE)

Lab Use Only
Due Date:

Temp. of coolers when received (C°):
1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix¹	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	8330 EXPL (ICE)	Lab/Sample ID (Lab Use Only)
W	3-12-2008	13:10		X	TH-EW-014-032008		2			X	
W	3-12-2008	13:10		X	TH-EW-214-032008		2			X	
W	3-12-2008	13:00		X	RIN-001-032008		2			X	
W	3-12-2008	1200		X	BAZE-MW-001-032008		2			X	
W	3-12-2008	14:00		X	BAZE-MW-007-032008		2			X	
W	3-12-2008	15:50		X	BAZE-MW-011-032008		2			X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Remarks
	3-12-2008	17:60	FED EX	3-12-2008		
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
				3/13/08	0930	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

¹Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
²Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

April 2008 Sampling Event
FNOP

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd Bldg 21 Suite 350 Lakewood CO 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

Sampler's Name: N/A/Pl. Vest
Sampler's Signature:

Proj. No.: 5403.001
Project Name: Mead - FNOP

ANALYSIS REQUESTED: 8260B, 8330

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] (HCL) VOA	(Ice) A/G 1 Lt.	250 ml	P/O	Lab/Sample ID (Lab Use Only)
W	4/9/08	0850		X	PZ-003-042008	3	2			X X
W	4/9/08	1050		X	PZ-203-042008	3				X
W	4/9/08	1050		X	PZ-003-042008MS	3				X
W	4/9/08	1050		X	PZ-003-042008MSD	3				X
W	4/9/08	1050		X	TRB-203-042008	2				X
W	4/9/08	1360		X	PZ-004-042008	3	2			X X
W	4/9/08	1430		X	PZ-002-042008	3	2			X X
W	4/9/08	1555		X	PZ-001-042008	3	2			X X
W	4/9/08	1140		X	RIN-003-042008	3	2			X X

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Remarks
	4/10/08	1600	Fed Ex 2634 7969 0570	4/10/08	1600	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
				4/11/08	1105	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

April 2008 Sampling Event
FNOP 2008
(-1)

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1746 Cole Blvd, Bldg 21 Suite 350
Lakewood, CO 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298 7837
Contract/Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

ANALYSIS REQUESTED: 8260B (HCl), 8330 (Ice)

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 2 3 4 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Ralph Vest
Sampler's Signature: [signature]

Proj. No.: 5403.001
Project Name: MEAD-FNOP April 2008

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA (HCl)	A/G 1 Lt. (Ice)	250 ml	P/O	8260B	8330	Lab/Sample ID (Lab Use Only)
W	4/15/08	1115		X	KM-001-042008	3	2			X	X	Standard Turnaround
W	4/15/08	1115		X	TRB-201-042008	2				X		Time
W	4/15/08	1305		X	KM-003-042008	3	2			X	X	
W	4/15/08	1335		X	RIN-KM1-042008	3	2			X	X	
W	4/15/08	1435		X	KM-002-042008	3	2			X	X	
W	4/15/08	1435		X	KM-002-042008ms	[illegible]	2			[illegible]	X	
W	4/15/08	1435		X	KM-002-042008msd		2				X	
W												

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	4/15/08	1700	FedEx 8634 79690554	4/15/08	1700
			[signature]	4/16/08	0935

Remarks:

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or-other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

Appendix B
Field Forms

April 2008 FWSP

April 9th 2008 ~~Baseline~~ Sampling Event 2008

Ralph West, Ben Richard

PZ-03 RJ/BP Project 5403.001

IDTW 1.42 Start Time 1030

1" Well w/ Dedicated Pump (3/4" Sample Pro)

PZ-003-042008 Sample Taken 2EXP 1VOC

QA/QC MS/MSD VOC

Sample Time 1050

Last Reading	FR	DTW	PH	Temp
	~~150ml~~ 80ml ~~139~~	1.39	6.66	10.57

Cond	Turb	Redox	D.O.	TD
.469	156	171.1	6.37	32.00

TRB-203-042008 1050 2VOC

TRB-403-042008 1050 2VOC

RIN-003-042008 1140 3VOC 2EXP

PZ-004 RJ/BP Project 5403.001

IDTW 3.81 Start Time 1240

1" Well w/ dedicated Pump (3/4" Sample Pro QED)

PZ-004-042008 Sample Taken 2EXP 3VOC

Sample Time 1300

Last Reading	FR	DTW	PH	Temp
	80mL	3.81	6.66	10.25

Cond	Turb	Redox	DO	TD
.468	~~159~~ 34.5	139.6	3.59	35.89

PZ-02 RJ/BP Project 5403.001

IDTW 46.30 Start Time 1410

1" Well w/ dedicated Pump (3/4 Sample Pro QED)

PZ-002-042008 Samples Taken 3VOC 2EXP

Sample Time 1430

Last Reading	FR	DTW	PH	Temp
	60ml	46.32	6.81	12.38

Cond	Turb	Redox	D.O.	TD
.493	1.93	107.3	6.63	81.00

RJ/BP 4-9-08

FWSP

April 9th 2008 April 2008 Sampling Event

Ralph West, Ben Richard (PSW)

PZ-01 RJ/BP Project 5403.001

IDTW 33.55 Start Time 1535

1" well w/ dedicated Pump (3/4" Sample Pro QED)

PZ-001-042008 Samples Taken 3VOC 2EXP

Sample Time 1555

Last Reading	FR	DTW	PH	Temp
	80mL	33.55	6.76	11.40

Cond.	Turb.	Redox	DO	TD
.488	6.78	124.9	5.63	70.50

RJ/BP 4-9-08

April 15th April 2008 Sampling Event
Ralph West, Ben Pickard (BSW)

KM-01 RU/BP Project 5403.001
IDTW 17.93 Start Time 1055
2" Well wo/dedicated Pump.
KM-001-042008 Sample Taken 3VOC 2EXP
Sample Time 1115 WL from TOC, TOC 1.8 AGS

Last Reading	FR	DTW	PH	Temp
	500ml	17.95	6.71	13.46

Cond.	Turb.	Redox	DO	TD
.486	36	148.0	2.20	62.55 BGS
				64.35 TOC

KM-03 RU/BP Project 5403.001
IDTW 36.64 Start Time 1245
2" Well wo/dedicated Bladder Pump
KM-003-042008 Samples Taken - 3VOC 2EXP
Sample Time 1305 WL from Toc, Toc 3' AGS

Last Reading	FR	DTW	PH	Temp
	500ml	36.65	6.17	14.95

Cond	Turb	Redox	DO	TD
.553	20.0	120.8	4.63	101 BGS 104.Toc

KM-02 RU/BP Project 5403.001
IDTW 3.97 Start Time 1415
MS/MSD 2" Well wo/dedicated Pump
KM-002-042008 Samples Taken 3VOC 6EXP MS/M
EXP Only Sample Time 1435 WL from Toc, Toc 2.28 AGS

Last Reading	FR	DTW	PH	Temp
	600ml	3.97 Toc	6.56	14.70

Cond.	Turb.	Redox	DO.	TD
.530	5.02	134.4	2.95	47' Toc
				44.72 BGS

TRB-201-042008 Sample Time 1115 Trip Blank
RIN-KM1-042008 Sample Time 1335 3VOC 2
Rinsate ASW

March 12th 2008 FNOP 1st QSE
(ASW - Pat Reynoldson)
(ECC - David Dauder)

BAZE MW-01 PR project 5403-001
IDTW / 48.65 | settime / 11:10 | starttime / 1110
4 inch well w/ non-dedicated pump
BAZE-MW-01
sample time 1200

List readings	ER	DTW	Ph	Temp.
	1000	meter not working	6.24	12.61

Turb.	Redox	D.O.	T.D.
19.5	-76.4	-33	meter not working

1300 - Decon of equipment at plant w/ liquinox + D.I. water

BAZE-MW-07 TH PR project 5403-001
IDTW / 52.8 | settime / 1340 | starttime / 1340
2 inch well w/ non-dedicated pump
BAZE-MW-01
sample time - 1400

List readings	ER	DTW	Ph	Temp.
	1000	52.85	7.43	13.48

Turb.	Redox	D.O.	TD
1.65	59.2	.50	79.85

1420 - Decon equipment at plant w/liquinox and DI water

BAZE-MW-11 TH PR project. 5403-001
IDTW / 48.20 | settime / 1530 | starttime / 1530
2 inch well w/non dedicated pump
BAZE-MW-11 sample time - 1550

List readings	ER	DTW	Ph	Temp.
	1000	48.24	6.90	12.86

Turb. 3.11 Redox 108.7 DO 3.70 TD 75.25

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D
Analytical Results on Compact Disc Summary Forms and Raw Data

QUALITY CONTROL SUMMARY REPORT

Second Quarter 2008
Surface Water Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

Prepared for

U.S. Army Corps of Engineers
Kansas City Districts

October 2008

1746 Cole Boulevard, Building 21, Suite 350
Lakewood, Colorado 8401
Telephone: (303) 298-7607
Facsimile: (303) 298-7837

www.ecc.net

Quality Control Summary Report
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

1.0 INTRODUCTION

ECC was contracted by the United States Army Corps of Engineers (USACE), Kansas City District to conduct quarterly surface water sampling events at the former Nebraska Ordnance Plant (NOP) near Mead, Nebraska. For the second quarter (June) 2008 sampling event, surface water samples were collected and analyzed for contaminants of concern and additional compounds. The work was performed in accordance with the *Surface Water Sampling Work Plan* (ECC, 2006a). The surface water Work Plan is Appendix A to the groundwater monitoring well Work Plan (ECC, 2006b) which contains the Field Sampling Plan and Quality Assurance Project Plan (QAPP) applicable to both monitoring well and surface water sampling. This QCSR is a summary of the chemical data quality review for the second quarter 2008 surface water sampling event.

Samples were analyzed for one or both of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B
- Explosives by EPA Method 8330.

All analyses were performed by TestAmerica of South Burlington, Vermont.

Table 1-1 presents the sampled surface water locations, corresponding sample identifications (IDs), and required analyses for the second quarter 2008 surface water sampling event. The Chain of Custody record (COC) and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers. Appendix D contains a CD with analytical data, including summary forms and raw data.

2.0 FIELD SAMPLING ACTIVITIES

During the second quarter 2008 surface water sampling event, 14 surface water locations were sampled. In addition, two QC samples (field sample duplicates) and one matrix spike (MS) / matrix spike duplicate (MSD) sample were collected. One trip blank was also collected for the volatile analysis.

Table 2-1 provides the following sample collection information listed by date sampled and laboratory sample ID for ease of comparison to laboratory data packages and field notes:

- QC split sample information;
- MS/MSD sample information;
- A cross-reference between laboratory sample IDs and field sample IDs;
- Sample delivery group (SDG) numbers;
- Dates of sample collection and sample receipt by the laboratory;
- COC number; and
- Requested analyses.

3.0 ANALYTICAL RESULTS

A summary of the analytical results is presented in Table 3-1 (VOCs) and Table 3-2 (explosives). Detections are presented in Table 3-3 (VOCs) and Table 3-4 (explosives). Field duplicate results are presented in Tables 3-5 (VOCs) and 3-6 (explosives). Trip blank results for TRB-211-062008 are presented in Table 3-7. The data in Tables 3-1 through 3-7 are presented alpha-numerically by surface water location, as listed in Table 1-1.

4.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present results of the data quality evaluation. This evaluation was performed in accordance with *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007) and the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001). Qualifiers were assigned based on laboratory QC criteria. The data quality evaluation results are presented in Table 4-1 according to field sample ID. Table 4-2 presents QC outliers for the VOC analyses and Table 4-3 presents QC outliers for explosives.

4.1 Sample Receipt at the Laboratory

The samples were received properly preserved and on ice and the temperatures of the sample coolers were within the recommended temperature range of 4 ± 2 °C.

4.2 Holding Times

All samples were extracted and / or analyzed within method-specific holding times.

4.3 Tuning and Calibration

According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), assessment of tune and calibration information is assessed using the laboratory case-narrative or summary forms. No deviations from method or Laboratory Quality Management Plan (LQMP)

specifications for the calibration and tuning of pertinent instrumentation were reported by the laboratory in the project-specific case narrative. Evaluation of the calibration summary forms indicated that all project calibration criteria were met.

4.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections were qualified as non-detect (U) if the concentration in the sample was less than five times the concentration in the associated blank. For common laboratory contaminants, results were qualified as described above if the concentration in the sample was less than ten times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than five or ten times the blank result do not require qualification.

Method blanks were analyzed with each sample batch for all analyses. No target analytes were detected in the method blanks.

4.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than five times the concentration in the associated blank (ten time for common laboratory contaminants). Sample results that are either non-detect (U), or greater than five times the blank result do not require qualification.

A trip blank accompanied samples submitted for analysis of VOCs, as required. No analytes were detected in the trip blank. Trip blank results for sample TRB-211-062008 are presented in Table 3-7.

4.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) and prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for each sample. All samples were spiked with appropriate surrogate compounds.

All surrogate results were within the respective % REC limits.

4.7 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses. LCSD samples were requested for analysis with each analytical batch that did not contain an MS/MSD.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

The RPD for acetone at 32% exceeded 30% in LCS/LCSD analyses for batch LA062408. As a result of the elevated RPD, the following results were qualified as estimated (J/UJ):

- Acetone in samples OART-062008, SW-006-062008, SW-008-062008, SW-208-062008, SW-015-062008, and SW-016-062008

All LCS/LCSD % RECs were within laboratory QC limits and all remaining RPDs were less than 30%. Refer to Table 4-2 for the VOC QC outliers.

4.8 Matrix Spike / Matrix Spike Duplicate

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the unspiked portion of the sample for % REC of the spiked analytes.

One set of MS/MSD samples were collected for sample SW-012-062008 and analyzed for the volatile and explosive analyses. All MS/MSD % RECs and RPDs were within laboratory QC limits.

4.9 Field Duplicate Results

Field duplicate results provide information on the reproducibility of field sample results and account for error introduced from handling, shipping, storage, preparation, and analysis of field

samples. Two field duplicate pairs were collected during the second quarter 2008 surface water sampling event. Field duplicate pairs are listed below.

- SW-008-062008 / SW-208-062008 (VOCs and Explosives)
- SW-010-062008 / SW-210-062008 (VOCs and Explosives)

In accordance with the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001), data are not qualified based solely on field duplicate sample results. Results within a factor of two of each other are considered to be in agreement. Results between a factor of two to three of each other are considered a minor discrepancy, and results greater than a factor of three are considered a major discrepancy.

All field duplicate results were within a factor of two of each other. It should be noted that acetone was detected in sample SW-208-062008 but was not detected in sample SW-008-062008. The data is considered acceptable as the detected result was below the reporting limit.

Field duplicate results are presented in Tables 3-5 (VOCs) and 3-6 (Explosives).

4.10 Dilutions and Reanalyses

Qualifiers assigned as a result of calibration range exceedance are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

The following sample required a diluted analysis (4.3x) due to analyte concentrations above the calibration range:

- OART-062008 for Trichloroethene (TCE)

The original sample results for TCE (130 ug/L) was flagged "E" by the laboratory as exceeding the calibration range and is considered an estimated value. According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results exceeding the calibrations range are not used for reporting or project decisions when acceptable results from dilutions are available. Therefore, the diluted concentration (130 ug/L) should be used for TCE and the original undiluted analysis should be used for all other results for this sample. The diluted results other than the result for TCE are not used.

No qualifiers were assigned as a result of exceeded calibration ranges as acceptable results from diluted sample analyses were provided.

4.11 Other QC Parameters

A column comparison between the detected explosive results was made using explosive identification summary forms. The validator confirmed all reported explosives detections and column RPDs. The following result had a RPD greater than 40% and the result was qualified as

estimated (J):

- 4-Amino-2,6-dinitrotoluene in sample OART-062008

All other column RPDs for explosives results were less than 40%. Table 4-3 presents the explosives QC outliers and associated samples.

These qualifiers were not used to determine analytical completeness or project completeness (Section 5.0).

4.12 Laboratory Qualifiers

Analytes detected below the practical quantitation limit or reporting limit but above the lowest level of detection were quantified and results were assigned an estimated (J) qualifier by the laboratory. These qualifiers were carried over by the validator and were not used to determine analytical completeness or project completeness (Section 5.0).

5.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the second quarter 2008 surface water sampling event. All completeness goals are established in the QAPP (ECC, 2006b).

5.1 Field Completeness

Field completeness for sample collection is assessed by comparing the number of samples collected to the number of samples planned for collection. Field completeness for explosives is 100%. Field completeness for VOCs is 100%. The overall field completeness percentage is therefore 100%. All field completeness percentages meet the field completeness goal of 95%. Section 2.0 presents the field sampling activities, including any deviations from planned sampling. Table 5-1 presents field completeness values.

5.2 Analytical Completeness

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that has not been rejected or qualified as estimated (J). Qualified data is considered acceptable if appropriate corrective actions were taken by the laboratory. The acceptable data completeness percentage for VOCs at 99% and for the explosives at 100% exceed the acceptable data completeness goal of 90%. The overall acceptable data completeness is 99.5% exceeds the overall acceptable data completeness goal of 95%.

Quality data is a measure of the percentage of usable data. Quality data includes all data except rejected data points, and does not include analyses for which replacement data points are available. Quality data completeness percentage for explosives is 100%, which exceeds the quality data completeness goals of 80% for each analytical method. Quality data completeness

percentage for VOCs is 100%, which exceeds the quality data completeness goals of 80% for each analytical method. Overall quality data completeness is 100%, which exceeds the overall quality data completeness goal of 80%.

Table 5-2 presents acceptable and quality data completeness.

5.3 Project Completeness

Project completeness combines sampling and analytical completeness percentages to assess the success in achieving the expectations of the project as a whole. Project completeness is determined by comparing the percentage of usable samples/measurements to the percentage of planned or observed samples/measurements. For the field completeness portion, this involves comparison of the number of samples properly collected to the number of samples planned for collection. For the analytical data completeness portion, this involves comparison of the number of usable data points to the number of observed data points. The field completeness and analytical completeness (quality data) completeness percentages are used to calculate the project completeness percentage. Project completeness is 100%, which is above the project completeness goal of 90%.

Table 5-3 presents project completeness.

6.0 CONCLUSIONS

Data are valid for use, as qualified. The results for acetone in six samples were qualified due to an elevated LCS RPD. Overall field completeness is 100%, acceptable data completeness is 100%, quality data completeness is 99.5%, and project completeness is 100%.

7.0 REFERENCES

ECC, 2006a, *Surface Water Sampling Work Plan*, June.

ECC, 2006b, *Work Plan and Sampling and Analysis Plan for Groundwater Monitoring Well Sampling Sampling*.

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007).

USACE, 2001, *Data Quality Evaluation Guidance, USACE CENWK-EC-EF*, July.

Table 1-1
Sample Locations, Sample IDs, and Analyses
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Surface Water Locations	Sample IDs	Analyses[1]
ARTESIAN	OART-062008	Explosives, Volatiles
SCW-04	SCW-004-062008	Explosives, Volatiles
SCW-05	SCW-005-062008	Explosives, Volatiles
SCW-06	SCW-006-062008	Explosives, Volatiles
SW-05	SW-005-062008	Explosives, Volatiles
SW-06	SW-006-062008	Explosives, Volatiles
SW-08	SW-008-062008	Explosives, Volatiles
SW-09	SW-009-062008	Explosives, Volatiles
SW-10	SW-010-062008	Explosives, Volatiles
SW-11	SW-011-062008	Explosives, Volatiles
SW-12	SW-012-062008	Explosives, Volatiles
SW-13	SW-013-062008	Explosives, Volatiles
SW-15	SW-015-062008	Explosives, Volatiles
SW-16	SW-016-062008	Explosives, Volatiles

Notes:

[1] = VOCs by Environmental Protection Agency (EPA) SW-846 Method 8260B and Explosives by EPA SW-846 Method 8330.

IDs = Identifications

Table 2-1
Sample Collection Summary
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	Quality Control Samples	MS/MSD Samples	Date Sampled	Date Received by Lab	COC Record Number	Lab ID	SDG	Analyses	
								VOCs	Explosives
Field Samples									
OART-062008			6/18/2008	6/20/2008	None	756841	126120	●	●
SCW-004-062008			6/18/2008	6/20/2008	None	756830	126120	●	●
SCW-005-062008			6/18/2008	6/20/2008	None	756831	126120	●	●
SCW-006-062008			6/18/2008	6/20/2008	None	756832	126120	●	●
SW-005-062008			6/18/2008	6/20/2008	None	756838	126120	●	●
SW-006-062008			6/18/2008	6/20/2008	None	756839	126120	●	●
SW-008-062008			6/18/2008	6/20/2008	None	756842	126120	●	●
	SW-208-062008		6/18/2008	6/20/2008	None	756843	126120	●	●
SW-009-062008			6/18/2008	6/20/2008	None	756837	126120	●	●
SW-010-062008			6/18/2008	6/20/2008	None	756835	126120	●	●
	SW-210-062008		6/18/2008	6/20/2008	None	756836	126120	●	●
SW-011-062008			6/17/2008	6/20/2008	None	756828	126120	●	●
SW-012-062008			6/18/2008	6/20/2008	None	756833	126120	●	●
		SW-012-062008MS	6/18/2008	6/20/2008	None	756833MS	126120	●	●
		SW-012-062008MSD	6/18/2008	6/20/2008	None	756833MD	126120	●	●
SW-013-062008			6/18/2008	6/20/2008	None	756834	126120	●	●
SW-015-062008			6/18/2008	6/20/2008	None	756840	126120	●	●
SW-016-062008			6/18/2008	6/20/2008	None	756844	126120	●	●
Trip Blanks									
TRB-211-062008			6/17/2008	6/20/2008	None	756829	126120	●	

Notes:

● = Requested for the indicated analyses.
COC = Chain of Custody Record
ID = Identification
Lab = Laboratory
MS/MSD = Matrix Spike / Matrix Spike Duplicate
SDG = Sample Delivery Group
VOCs = Volatile Organic Compounds

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		ARTESIAN	ARTESIAN	SCW-004	SCW-005	SCW-006	SW-05
Field Sample ID:		OART-062008	OART-062008	SCW-004-062008	SCW-005-062008	SCW-006-062008	SW-005-062008
Lab Sample ID:		756841	756841D1	756830	756831	756832	756838
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	DL 4.3	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U		1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U		1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U		1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	0.66 J		1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/l	1 U		1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U		1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U		5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U		1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U		5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U		1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U		1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	ARTESIAN	ARTESIAN	SCW-004	SCW-005	SCW-006	SW-05
	Field Sample ID:	OART-062008	OART-062008	SCW-004-062008	SCW-005-062008	SCW-006-062008	SW-005-062008
	Lab Sample ID:	756841	756841D1	756830	756831	756832	756838
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	DL 4.3	I 1	I 1	I 1	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U		5 U	5 U	5 U	5 U
Acetone	ug/l	5 UJ		5 U	5 U	5 U	2.1 J
Benzene	ug/l	1 U		1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U		1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U		1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U		1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U		1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U		1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U		1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U		1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U		1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U		1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U		1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	0.66 J		1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/l	1 U		1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U		1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U		1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U		1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U		1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U		1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U		1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U		1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U		1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	ARTESIAN	ARTESIAN	SCW-004	SCW-005	SCW-006	SW-05
	Field Sample ID:	OART-062008	OART-062008	SCW-004-062008	SCW-005-062008	SCW-006-062008	SW-005-062008
	Lab Sample ID:	756841	756841D1	756830	756831	756832	756838
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	DL 4.3	I 1	I 1	I 1	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U		1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
Styrene	ug/l	1 U		1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U		1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U		1 U	1 U	1 U	1 U
Toluene	ug/l	1 U		1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U		1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U		1 U	1 U	1 U	1 U
Trichloroethene	ug/l		130	1 U	1 U	1 U	1 U
Trichlorofluoromethane	ug/l	1 U		1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U		1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U		1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-06	SW-08	SW-08	SW-09	SW-10	SW-10
Field Sample ID:		SW-006-062008	SW-008-062008	SW-208-062008	SW-009-062008	SW-010-062008	SW-210-062008
Lab Sample ID:		756839	756842	756843	756837	756835	756836
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Field Duplicate	Original Sample	Original Sample	Field Duplicate
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	1 U	0.24 J	0.23 J	1 U	0.27 J	0.27 J
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	SW-06	SW-08	SW-08	SW-09	SW-10	SW-10
	Field Sample ID:	SW-006-062008	SW-008-062008	SW-208-062008	SW-009-062008	SW-010-062008	SW-210-062008
	Lab Sample ID:	756839	756842	756843	756837	756835	756836
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Field Duplicate	Original Sample	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/l	5 UJ	5 UJ	3.4 J	5 U	5 U	5 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1 U	0.24 J	0.23 J	1 U	0.27 J	0.27 J
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	SW-06	SW-08	SW-08	SW-09	SW-10	SW-10
	Field Sample ID:	SW-006-062008	SW-008-062008	SW-208-062008	SW-009-062008	SW-010-062008	SW-210-062008
	Lab Sample ID:	756839	756842	756843	756837	756835	756836
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Field Duplicate	Original Sample	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	1 U	4.3	4.5	1 U	5	5.2
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-11	SW-12	SW-13	SW-15	SW-16
Field Sample ID:		SW-011-062008	SW-012-062008	SW-013-062008	SW-015-062008	SW-016-062008
Lab Sample ID:		756828	756833	756834	756840	756844
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/17/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1
VOCs	**Units**					
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	0.26 J
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	SW-11	SW-12	SW-13	SW-15	SW-16
	Field Sample ID:	SW-011-062008	SW-012-062008	SW-013-062008	SW-015-062008	SW-016-062008
	Lab Sample ID:	756828	756833	756834	756840	756844
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**					
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U	5 U
Acetone	ug/l	2.8 J	5 U	5 U	5 UJ	5 UJ
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	0.26 J
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	SW-11	SW-12	SW-13	SW-15	SW-16
	Field Sample ID:	SW-011-062008	SW-012-062008	SW-013-062008	SW-015-062008	SW-016-062008
	Lab Sample ID:	756828	756833	756834	756840	756844
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**					
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	1 U	0.74 J	1.1	1 U	5
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		ARTESIAN	SCW-004	SCW-005	SCW-006	SW-05	SW-06
Field Sample ID:		OART-062008	SCW-004-062008	SCW-005-062008	SCW-006-062008	SW-005-062008	SW-006-062008
Lab Sample ID:		756841	756830	756831	756832	756838	756839
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
Explosives	**Units**						
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.033 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.042 J
HMX	ug/l	0.29	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	ug/l	3.5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetryl	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-08	SW-08	SW-09	SW-10	SW-10	SW-11
Field Sample ID:		SW-008-062008	SW-208-062008	SW-009-062008	SW-010-062008	SW-210-062008	SW-011-062008
Lab Sample ID:		756842	756843	756837	756835	756836	756828
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/17/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Original Sample	Field Duplicate	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
Explosives	**Units**						
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	ug/l	0.42	0.43	0.25 U	0.39	0.40	0.25 U
Tetryl	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-12	SW-13	SW-15	SW-16
Field Sample ID:		SW-012-062008	SW-013-062008	SW-015-062008	SW-016-062008
Lab Sample ID:		756833	756834	756840	756844
Lab Name:		TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1
Explosives	**Units**				
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
HMX	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
RDX	ug/l	0.25 U	0.099 J	0.25 U	0.43
Tetryl	ug/l	0.25 U	0.25 U	0.25 U	0.25 U

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 3
Detections - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	ARTESIAN	ARTESIAN	SW-05	SW-08	SW-08	SW-10
	Field Sample ID:	OART-062008	OART-062008	SW-005-062008	SW-008-062008	SW-208-062008	SW-010-062008
	Lab Sample ID:	756841	756841D1	756838	756842	756843	756835
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Field Duplicate	Original Sample
	Analysis Information:	I 1	DL 4.3	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,2-Dichloroethene	ug/l	0.66 J			0.24 J	0.23 J	0.27 J
Acetone	ug/l			2.1 J		3.4 J	
cis-1,2-Dichloroethene	ug/l	0.66 J			0.24 J	0.23 J	0.27 J
Trichloroethene	ug/l		130		4.3	4.5	5

Table 3 - 3
Detections - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	SW-10	SW-11	SW-12	SW-13	SW-16
	Field Sample ID:	SW-210-062008	SW-011-062008	SW-012-062008	SW-013-062008	SW-016-062008
	Lab Sample ID:	756836	756828	756833	756834	756844
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/17/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Field Duplicate	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**					
1,2-Dichloroethene	ug/l	0.27 J				0.26 J
Acetone	ug/l		2.8 J			
cis-1,2-Dichloroethene	ug/l	0.27 J				0.26 J
Trichloroethene	ug/l	5.2		0.74 J	1.1	5

Table 3 - 3
Detections - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 4
Detections - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

	Station ID:	ARTESIAN	SW-06	SW-08	SW-08	SW-10	SW-10
	Field Sample ID:	OART-062008	SW-006-062008	SW-008-062008	SW-208-062008	SW-010-062008	SW-210-062008
	Lab Sample ID:	756841	756839	756842	756843	756835	756836
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Field Duplicate	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
Explosives	**Units**						
4-Amino-2,6-Dinitrotoluene	ug/l	0.033 J					
4-Nitrotoluene	ug/l		0.042 J				
HMX	ug/l	0.29					
RDX	ug/l	3.5		0.42	0.43	0.39	0.40

Table 3 - 4
Detections - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-13	SW-16
Field Sample ID:		SW-013-062008	SW-016-062008
Lab Sample ID:		756834	756844
Lab Name:		TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample
Analysis Information:		I 1	I 1
Explosives	**Units**		
4-Amino-2,6-Dinitrotoluene	ug/l		
4-Nitrotoluene	ug/l		
HMX	ug/l		
RDX	ug/l	0.099 J	0.43

Table 3 - 4
Detections - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 5
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-08	SW-08	SW-10	SW-10
Field Sample ID:		SW-008-062008	SW-208-062008	SW-010-062008	SW-210-062008
Lab Sample ID:		756842	756843	756835	756836
Lab Name:		TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Field Duplicate
Analysis Information:		I 1	I 1	I 1	I 1
VOCs	**Units**				
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	0.24 J	0.23 J	0.27 J	0.27 J
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U

Table 3 - 5
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-08	SW-08	SW-10	SW-10
Field Sample ID:		SW-008-062008	SW-208-062008	SW-010-062008	SW-210-062008
Lab Sample ID:		756842	756843	756835	756836
Lab Name:		TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Field Duplicate
Analysis Information:		I 1	I 1	I 1	I 1
VOCs	**Units**				
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U
Acetone	ug/l	5 UJ	3.4 J	5 U	5 U
Benzene	ug/l	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	0.24 J	0.23 J	0.27 J	0.27 J
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U

Table 3 - 5
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-08	SW-08	SW-10	SW-10
Field Sample ID:		SW-008-062008	SW-208-062008	SW-010-062008	SW-210-062008
Lab Sample ID:		756842	756843	756835	756836
Lab Name:		TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Field Duplicate
Analysis Information:		I 1	I 1	I 1	I 1
VOCs	**Units**				
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U
Toluene	ug/l	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	4.3	4.5	5	5.2
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U

Table 3 - 5
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 6
Field Duplicate Results - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:		SW-08	SW-08	SW-10	SW-10
Field Sample ID:		SW-008-062008	SW-208-062008	SW-010-062008	SW-210-062008
Lab Sample ID:		756842	756843	756835	756836
Lab Name:		TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Field Duplicate
Analysis Information:		I 1	I 1	I 1	I 1
Explosives	**Units**				
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
HMX	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U
RDX	ug/l	0.42	0.43	0.39	0.40
Tetryl	ug/l	0.25 U	0.25 U	0.25 U	0.25 U

Table 3 - 6
Field Duplicate Results - Explosive Compounds
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 7
Trip Blank Results
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:	Trip Blank
Field Sample ID:	TRB-211-062008
Lab Sample ID:	756829
Lab Name:	TALVT
Sample Date:	6/17/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
1,1-Dichloroethane	ug/l	1 U
1,1-Dichloroethene	ug/l	1 U
1,1-Dichloropropene	ug/l	1 U
1,1,1-Trichloroethane	ug/l	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U
1,1,2-Trichloroethane	ug/l	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U
1,2-Dibromoethane	ug/l	1 U
1,2-Dichlorobenzene	ug/l	1 U
1,2-Dichloroethane	ug/l	1 U
1,2-Dichloroethene	ug/l	1 U
1,2-Dichloropropane	ug/l	1 U
1,2,3-Trichlorobenzene	ug/l	1 U
1,2,4-Trichlorobenzene	ug/l	1 U
1,2,4-Trimethylbenzene	ug/l	1 U
1,3-Dichlorobenzene	ug/l	1 U
1,3-Dichloropropane	ug/l	1 U
1,3,5-Trimethylbenzene	ug/l	1 U
1,4-Dichlorobenzene	ug/l	1 U
2-Butanone	ug/l	5 U
2-Chlorotoluene	ug/l	1 U
2-Hexanone	ug/l	5 U
4-Chlorotoluene	ug/l	1 U
4-Isopropyltoluene	ug/l	1 U

Table 3 - 7
Trip Blank Results
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:	Trip Blank
Field Sample ID:	TRB-211-062008
Lab Sample ID:	756829
Lab Name:	TALVT
Sample Date:	6/17/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
4-Methyl-2-pentanone	ug/l	5 U
Acetone	ug/l	5 U
Benzene	ug/l	1 U
Bromobenzene	ug/l	1 U
Bromochloromethane	ug/l	1 U
Bromodichloromethane	ug/l	1 U
Bromoform	ug/l	1 U
Bromomethane	ug/l	1 U
Carbon disulfide	ug/l	1 U
Carbon tetrachloride	ug/l	1 U
Chlorobenzene	ug/l	1 U
Chloroethane	ug/l	1 U
Chloroform	ug/l	1 U
Chloromethane	ug/l	1 U
cis-1,2-Dichloroethene	ug/l	1 U
cis-1,3-Dichloropropene	ug/l	1 U
Dibromochloromethane	ug/l	1 U
Dibromomethane	ug/l	1 U
Dichlorodifluoromethane	ug/l	1 U
Ethylbenzene	ug/l	1 U
Hexachlorobutadiene	ug/l	1 U
Isopropylbenzene	ug/l	1 U
Methyl tert butyl ether	ug/l	1 U
Methylene chloride	ug/l	1 U
m,p-Xylene	ug/l	1 U
Naphthalene	ug/l	1 U

Table 3 - 7
Trip Blank Results
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Surface Water

Station ID:	Trip Blank
Field Sample ID:	TRB-211-062008
Lab Sample ID:	756829
Lab Name:	TALVT
Sample Date:	6/17/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
n-Butylbenzene	ug/l	1 U
n-Propylbenzene	ug/l	1 U
o-Xylene	ug/l	1 U
sec-Butylbenzene	ug/l	1 U
Styrene	ug/l	1 U
tert-Butylbenzene	ug/l	1 U
Tetrachloroethene	ug/l	1 U
Toluene	ug/l	1 U
trans-1,2-Dichloroethene	ug/l	1 U
trans-1,3-Dichloropropene	ug/l	1 U
Trichloroethene	ug/l	1 U
Trichlorofluoromethane	ug/l	1 U
Vinyl chloride	ug/l	1 U
Xylene (Total)	ug/l	1 U

Table 3 - 7
Trip Blank Results
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 4-1
Data Evaluation Results
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Laboratory Result		Data Review Qualifier	Reason for Qualification			Comments	Final Result
										LCS	RPD	CR		
OART-122007	6/18/2008	126120	756841	VOCs	Trichloroethene	µg/L	130	E	Not used			x	Calibration Range Exceeded Report TCE from Dilution	130 Not used
					Acetone		5.0	U	UJ	x			High LCS/LCSD RPD	5 UJ
				Explosives	4-Amino-2,6-dinitrotoluene		0.033	J	J		x		RPD between column results exceeded 40%	0.033 J
OART-122007DL	6/18/2008		756841DL	VOCs	All Results Except TCE		Various	U	Not used			x	Report only TCE from this Analysis	130 D
SW-006-062008	6/18/2008		756839	VOCs	Acetone	µg/L	5.0	U	UJ	x			High LCS/LCSD RPD	5 UJ
SW-008-062008	6/18/2008		756842	VOCs	Acetone	µg/L	5.0	U	UJ	x			High LCS/LCSD RPD	5 UJ
SW-208-062008	6/18/2008		756843	VOCs	Acetone	µg/L	3.4	J	J	x			High LCS/LCSD RPD	3.4 J
SW-015-062008	6/18/2008		756840	VOCs	Acetone	µg/L	5.0	U	UJ	x			High LCS/LCSD RPD	5 UJ
SW-016-062008	6/18/2008		756844	VOCs	Acetone	µg/L	5.0	U	UJ	x			High LCS/LCSD RPD	5 UJ

Notes:

CR = Calibration Range
D = Result from dilution
DL = Dilution
E = Laboratory qualifier. Indicates that the result exceeds the instrument calibration range.
J = Qualified as estimated
LCS/LCSD = Laboratory Control Sample/ Laboratory Control Sample Duplicate
RPD = Relative Percent Difference
SDG = Sample Delivery Group
TCE = Trichloroethene
UJ Non-detect and Qualified as estimated
U = Qualified as non-detect
ug/L = micrograms per liter
VOCs = Volatile organic compounds

Table 4-2
VOC Quality Control Outliers
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Parameter	Laboratory QC Parameter Control Limit	QC Result
LCS/LCSD					
OART-062008 SW-006-062008 SW-008-062008 SW-208-062008 SW-015-062008 SW-016-062008	126120	Acetone	LCS/LCSD RPD	30%	32.0%
Dilutions and Reanalyses		(E flags are not used in completeness percentage when dilution available)			
OART-062008	126120	TCE	Calibration Range Exceedance	Linear Calibration Range	130 E Report as 130 D

Note: The sample above was diluted and reanalyzed. The result for TCE should be reported from the dilution.

Notes:

D = Result from dilution
E = Exceeds Calibration Range
ID = Identification
LCS/LCSD = Laboratory Control Sample/ Laboratory Control Sample Duplicate
QC = Quality Control
RPD = Relative Percent Difference
SDG = Sample Delivery Group
TCE = Trichloroethene

Table 4-3
Explosives Quality Control Outliers
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Parameter	Laboratory QC Parameter Control Limit	QC Result
Other QC (These outliers were not used in completeness percentage)					
OART-062008	126120	4-Amino-2,6-dinitrotoluene	RPD Between Column Results	40%	77%

Notes:

ID = Identification
QC = Quality Control
RPD = Relative percent differences
SDG = Sample Delivery Group

Table 5-1
Field Completeness
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned[1]	Number of Samples Collected	Field Completeness
Volatile Organic Compounds	16	16	100%
Explosives	16	16	100%
Totals =	32	32	100%
Goal =			95%

Notes:

[1] = Number of samples includes field samples and duplicate samples.

Table 5-2
Analytical Completeness
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters[1]	Acceptable Data[2]	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data[3]	Quality Data Completeness	Quality Data Completeness Goals
Volatile Organic Compounds	1056	1050	99%	90%	1056	100%	80%
Explosives	224	224	100%	90%	224	100%	80%
Totals =	1280	1274	99.5%	95%	1280	100%	80%

Notes:

[1] = Total number of parameters includes field samples (including data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates.

[2] = Acceptable data is defined as data that passed all quality control (QC) criteria, or data that did not pass QC criteria but had appropriate corrective actions taken. Acceptable data completeness is a measure of laboratory contract compliance. R qualified data with acceptable replacement data are not counted.

[3] = Quality data is a measure of the percentage of usable data points. Quality data includes all data except rejected data points.

Table 5-3
Project Completeness
Second Quarter 2008 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical[1]	Project Completeness[2]
100%	100%	100%
Project Completeness Goal =		90%

Notes:
1 = Analytical completeness is the percentage of usable data i.e. quality data completeness.
2 = Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Final Shipment 2nd Quarter SW Sampling June 2008

1 - 2

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ERC	Company:
Address: 1746 Cole Blvd Bldg 21 Suite 350 Lakewood CO 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

Sampler's Name: Ralph West
Sampler's Signature: Ralph West

Proj. No.: 5403.001
Project Name: Mead Fiop

ANALYSIS REQUESTED: 8260B (HCL), 8330 (ICE)

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No./Type of Containers[2] HCL VOA	ICE A/G 1 Lt.	250 ml	P/O	8260B	8330	Lab/Sample ID (Lab Use Only)
W	6/17/08	1300		X	SW-011-062008	3	2			X	X	
W	6/17/08	1360		X	TRB-211-062008	2				X		
W	6/18/08	0900		X	SCW-004-062008	3	2			X	X	
W	6/18/08	0915		X	SCW-005-062008	3	2			X	X	
W	6/18/08	0930		X	SCW-006-062008	3	2			X	X	
W	6/18/08	1010		X	SW-012-062008	3	2			X	X	
W	6/18/08	1010		X	SW-012-062008 MS	3	2			X	X	
W	6/18/08	1010		X	SW-012-062008 MSD	3	2			X	X	
W	6/18/08	1070		X	SW-013-062008	3	2			X	X	
W	6/18/08	1100		X	SW-010-062008	3	2			X	X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ralph L. West	6/19/08	1730	Fed Ex 8634-7968 0900	6/19/08	1730
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
				6/20/08	0850
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube Sl. - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Final shipment 2008 2nd Quarter SW Sampling Event Mead Field
2-2

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: Ecc	Company:
Address: 1746 Cole Blvd Bldg 21 Suite 350 Lakewood, Co. 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837.	Fax:
Contract/ Quote:	

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Ralph Vest
Sampler's Signature: [signature]

Proj. No.: 5403.001
Project Name: Mead FWDP

ANALYSIS REQUESTED: 8260B (HCl) ICE; 8330 (Ex2)

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA (HCl)	A/G 1 Lt. (Ice)	250 ml	P/O	8260B	8330	Lab/Sample ID (Lab Use Only)
W	6/18/08	1100		X	SW-210-062008	3	2			X	X	
W	6/18/08	1230		X	SW-009-062008	3	2			X	X	
W	6/18/08	1245		X	SW-005-062008	3	2			X	X	
W	6/18/08	1310		X	SW-006-062008	3	2			X	X	
W	6/18/08	1330		X	SW-015-062008	3	2			X	X	
W	6/18/08	1345		X	OART-062008	3	2			X	X	
W	6/18/08	1430		X	SW-008-062008	3	2			X	X	
W	6/18/08	1430		X	SW-208-062008	3	2			X	X	
W	6/18/08	1500		X	SW-016-062008	3	2			X	X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	6/19/08	1730	Fed Ex 8634 7969 0800	6/19/08	1730
Relinquished by: (Signature)	Date	Time	Received by: (Signature) [signature]	62008	0950
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/C - Plastic or other ______

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

Appendix B
Field Notes

June 18th 2nd Quarter SW Sampling Event.
ASW Erik Weiss Ralph West
5403.001

SW SCW-004-062008 Sample Time 0900
Total Depth 3' 3voa 2Exp

SCW-005-062008 Sample Time 0915
Total Depth 3' 3voa 2Exp

SCW-006-062008 Sample Time 0930
Total Depth 3' 3voa 2Exp.

MS/MSD SW-012-062008 Sample Time 1010
Total Depth 3' 6Exp 9voa MS/MSD

SW-013-062008 Sample-Time 1040
Total Depth 3' 3voa 2Exp

QC SW-010-062008 Sample Time 1100
Total Depth 2.5' 6voa 4Exp QC.

SW-009-062008 Sample Time 1230
Total Depth 2' 3voa 2Exp

SW-005-062008 Sample Time 1245
Total Depth 1.5' 3voa 2Exp

SW-006-062008 Sample Time 1310
Total Depth 1' 3voa 2Exp

SW-015-062008 Sample Time 1330
Total Depth 1.5 ft 3voa 2Exp

OART-062008 Sample Time 1345
Flow Rate 3voa 2Exp

June 18th 2nd Quarter SW Sampling
Event 5403.001

QA/QC SW-008-062008 Sample Time 1430 2Exp 3voa
SW-208-062008 Sample Time 1430 2Exp 3voa
SW-408-062008 Sample Time 1430 2Exp 3voa
Total Depth 1' 6Exp 9voa

SW-016-062008 Sample Time 1500
Total Depth 1.5' 3voa 2Exp

TRB-408-062008 Sample Time 1430
2voa

[signature] 6-18-08

8

Mead Fwop

T June 17th 2008 SW Sampling 2nd Quarter 2008

(ASW) Ralph Vest, Pat Reynolds,

SW-011-062008 2 Exp 3 oz Sample Time 1300

Total Depth 2'

A TRB-211-062008 Sample Time 1300

Blank

Exp

MS/MSD

S

Blank

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D
Analytical Results on Compact Disc Summary Forms and Raw Data

QUALITY CONTROL SUMMARY REPORT

Second Quarter 2008
Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

Prepared for

U.S. Army Corps of Engineers
Kansas City Districts

October 2008

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Quality Control Summary Report
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

1.0 INTRODUCTION

The flowing Seeps and Drain Tiles (Johnson Creek) sampling was conducted by ECC as contracted by the United States Army Corps of Engineers (USACE), Kansas City District on June 17, 2008 and on June 19, 2008 at the former Nebraska Ordnance Plant, near Mead, Nebraska. ECC performed all sampling activities in accordance with the Field Sampling Plan and Quality Assurance Project Plan (QAPP) of the *Work Plan and Sampling and Analysis Plan for Groundwater Monitoring Well Sampling* (ECC, 2006). This Quality Control Summary Report presents a summary of the chemical data quality review for the second quarter 2008 Drain Tile and Seep sampling event.

Samples were analyzed for the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B

All analyses were performed by TestAmerica of South Burlington, Vermont.

Table 1-1 presents the seeps and drain tiles that were flowing and could be sampled, the corresponding sample identifications (IDs) for these seeps and drain tiles, and the required analyses for the second quarter 2008 drain tile and seep sampling event. The Chain of Custody Records (COCs) and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers and drinking water standards. Appendix D contains a compact disc (CD) with all analytical data, including summary forms and raw data, for the second quarter 2008 drain tile and seep sampling event.

2.0 FIELD SAMPLING ACTIVITIES

Samples from nine drain tiles and sixteen seeps were collected during the second quarter 2008 drain tile and seep sampling event for VOCs. Three field duplicate samples, three matrix spike (MS)/matrix spike duplicate (MSD) pairs, and one trip blank were collected for the VOC analysis. None of drain tiles or seeps were sampled for the explosive analysis

[Note: The third set of MS/MSD analyses requested on sample DT-002-062008 exceeded the 1:20 frequency criteria, and were not analyzed.]

Table 2-1 provides the following sample collection information:

- QC split sample information;
- MS/MSD sample information;
- A cross-reference between laboratory sample IDs and field sample IDs;
- Sample delivery group (SDG) numbers;
- COC numbers;
- Dates of sample collection and sample receipt by the laboratory; and
- Requested analyses.

3.0 ANALYTICAL RESULTS

A summary of the analytical results is presented in Table 3-1 (VOCs). Detections are presented in Table 3-2 (VOCs). Field duplicate results are presented in Tables 3-3 (VOCs) and the trip blank results are presented in Table 3-4. The data in Tables 3-1 through 3-4 are presented alpha-numerically by drain tile and seep location, as listed in Table 1-1.

4.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present results of the data quality evaluation. This evaluation was performed in accordance with *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007) and the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001). Qualifiers were assigned based on laboratory QC criteria. The data quality evaluation results are presented in Table 4-1 according to field sample ID. Table 4-2 presents QC outliers for the VOC analyses.

4.1 Sample Receipt at the Laboratory

All sample transfer requirements were met for samples received at the laboratory with the exception discussed below. The samples were received at the laboratory properly preserved, on ice and within the recommended temperature range of 4 ± 2 °C.

According to the Sample Receipt and Log-in Checklist, samples DT-017-062008, SP-014-062008, and SP-019-062008 were received with air bubbles in one vial each. No action was necessary because the laboratory utilized the sample vials without air bubbles for the sample analyses.

It should be noted that both vials for the trip blank TRB-211-062008 were received with headspace.

4.2 Holding Times

The preserved VOC water samples were analyzed within 14 days of sample collection.

4.3 Tuning and Calibration

According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), assessment of tune and calibration information is assessed using the laboratory case-narrative or summary forms. No deviations from method or Laboratory Quality Management Plan (LQMP) specifications for the calibration and tuning of pertinent instrumentation were reported by the laboratory in the project-specific case narrative and Evaluation of the calibration summary forms indicated that all criteria were met.

4.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections were qualified as non-detect (U) if the concentration in the sample was less than five times the concentration in the associated blank. For common laboratory contaminants, results were qualified as described above if the concentration in the sample was less than ten times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than five or ten times the blank result do not require qualification.

No target analytes were detected in the VOC method blanks.

4.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than five times the concentration in the associated blank (ten times for common laboratory contaminants). Sample results that are either non-detect (U), or greater than five or times the blank result do not require qualification.

A trip blank accompanied samples submitted for analysis of VOCs, as required. Target compounds were not detected in the volatile trip blanks. Trip blank results are summarized in Table 3-4.

4.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) and prior to analysis (for non-extractable

methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for each sample.

Surrogate compounds were added to the samples and QC samples. The surrogate percent recoveries (% RECs) were within laboratory QC limits.

4.7 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which A laboratory control sample (LCS) consists of a matrix similar to that of the field sample. The LCS is spiked with known concentrations of analytes. The LCS % REC is a measure of the method accuracy.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

The LCS/LSCD %RECs for acetone at 142% and 166% exceeded the laboratory QC limits of 60-140% for the spike analyses of LB062408LCS/LCSD. As a result of these outliers, the following detected result was qualified as estimated (J):

- Acetone in sample DT-015-062008

Additionally, a %REC for 2-butanone exceeded the laboratory QC limits. No action was required for the elevated % REC because this compound was not detected in the associated samples.

All other LCS/LCSD % RECs were within laboratory QC limits and all RPDs were less than 30%. Refer to Table 4-1 for the QC outliers, resulting in sample qualification.

4.8 Matrix Spike / Matrix Spike Duplicate

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the unspiked portion of the sample for % REC of the spiked analytes.

Three sets of MS/MSD samples were collected for the volatile analyses. MSD analyses were performed on samples DT-001-062008 and SP-019-062008. The third set of MS/MSD analyses collected for sample DT-002-062008 exceeded the 1:20 frequency criteria. The laboratory was instructed to discard this analysis.

All % RECs and relative percent differences (RPDs) were within laboratory QC limits.

4.9 Field Duplicates

Field duplicates provide information regarding the reproducibility of analytical results and account for error introduced from handling, shipping, preparing, and analyzing field samples.

The following field duplicate pairs were collected during the second quarter 2008 drain tile and seep sampling event:

- DT-002-062008 / DT-202-062008 (VOCs)
- DT-015-062008 / DT-215-062008 (VOCs)
- DT-017-062008 / DT-217-062008 (VOCs)

In accordance with the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001) and *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), data are not qualified based solely on field duplicate sample results. Results within a factor of two of each other were considered to be in agreement. Results between a factor of two to three of each other were considered a minor discrepancy, and results greater than a factor of three were considered a major discrepancy.

All field duplicate results were within a factor of two of each other. It should be noted that acetone was detected in sample DT-015-062008 but was not detected in sample DT-215-062008. The results are considered acceptable as the detected result in sample DT-015-062008 was at a concentration below the reporting limit.

Field duplicate results are summarized in Table 3-3.

4.10 Dilutions and Reanalyses

Qualifiers assigned as a result of calibration range exceedance are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

The following samples required a diluted analysis due to analyte concentrations above the calibration range:

- SP-006-062008 – Trichloroethene (TCE)
- SP-007-062008 – TCE
- SP-008-062008 – TCE

- SP-009-062008 – TCE
- SP-011-062008 – TCE
- SP-012-062008 – TCE
- SP-014-062008 – TCE
- SP-017-062008 – TCE
- SP-018-062008 – TCE
- SP-019-062008 – TCE
- SP-020-062008 – TCE

The original samples results for TCE in the above samples was flagged "E" by the laboratory as exceeding the calibration range and are considered an estimated values. According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results exceeding the calibrations range are not used for reporting or project decisions when acceptable results from dilutions are available. Therefore, the diluted concentrations should be used for TCE and the original undiluted analysis should be used for all other results for these samples. The diluted results other than the result for TCE are not used.

No qualifiers were assigned as a result of exceeded calibration ranges as acceptable results from diluted sample analyses were provided.

4.11 Other QC Parameters

Not applicable as explosive analyses were not requested for these samples for the second quarter 2008 drain tile and seep sampling event.

4.12 Laboratory Qualifiers

Analytes detected below the quantitation limit or reporting limit, but above the lowest level of detection were quantified and results were assigned an estimated (J) qualifier by the laboratory. These qualifiers were carried over by the validator and were not used to determine analytical completeness or project completeness (Section 5.0).

5.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the second quarter 2008 drain tile and seep sampling event. All completeness goals were established in the QAPP (ECC, 2006).

5.1 Field Completeness

Field completeness for sample collection is assessed by comparing the number of samples collected to the number of samples planned for collection. Although several additional drain tiles and sweeps were identified along Johnson Creek, only those flowing during each sampling event are to be sampled. Therefore field completeness for the VOCs is considered to be 100%.

The overall field completeness percentage is 100%. The field completeness percentage exceeds the field completeness goal of 95%. Section 2.0 presents the field sampling activities, including any deviations from planned sampling if applicable. Table 5-1 presents field completeness values.

5.2 Analytical Completeness

Analytical completeness is calculated as both acceptable data completeness and quality data completeness.

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that have not been rejected or qualified as estimated (J). Qualified data are considered acceptable if appropriate corrective actions were taken by the laboratory. Acceptable data completeness percentages for VOCs at 99.9% exceeded the acceptable data completeness goal for each analytical method of 90%. The overall acceptable data completeness is just below 100% (99.9%) which is above the overall acceptable data completeness goal of 95%.

Quality data is a measure of the percentage of usable data points. Usable data points include all non-rejected data. Rejected data points with replacement data do not count against quality data completeness. Quality data completeness percentages for the VOCs are 100%, which exceeds the quality data completeness goals of 80% for each analytical method. Overall quality data completeness is 100%, which exceeds the overall quality data completeness goal of 80%.
Table 5-2 presents analytical data completeness values.

5.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the project as a whole. Project completeness is assessed by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/measurements planned. Project completeness is calculated using field completeness and analytical completeness (quality data) percentages. Analytical completeness for the sampling event was 100% and field completeness was 100%. The project completeness was calculated as 100%. Table 5-3 presents project completeness values.

6.0 CONCLUSIONS

Data are valid for use, as qualified. No data points were qualified as rejected (R). Overall field completeness is 100%, acceptable data completeness is 99.9%, quality data completeness is 100%, and project completeness is 100%. Qualifiers assigned due to calibration range exceedance do not effect analytical or project completeness.

7.0 REFERENCES

ECC, 2006, *Work Plan and Sampling and Analysis Plan for Groundwater Monitoring Well Sampling*, Part I - Work Plan, Part II - Field Sampling Plan, Part III - Quality Assurance Project Plan, June.

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007).

USACE, 2001, *CENWK-EC-EF Data Quality Evaluation Guidance*, July.

Tables

Table 1-1
Sample Collection Summary
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Location	Sample Identifications[2]	Analyses[1]
DT-01	DT-001-062008	Volatiles
DT-02	DT-002-062008	Volatiles
DT-03	DT-003-062008	Volatiles
DT-07	DT-007-062008	Volatiles
DT-11	DT-011-062008	Volatiles
DT-12	DT-012-062008	Volatiles
DT-13	DT-013-062008	Volatiles
DT-15	DT-015-062008	Volatiles
DT-17	DT-017-062008	Volatiles
SP-01	SP-001-062008	Volatiles
SP-06	SP-006-062008	Volatiles
SP-07	SP-007-062008	Volatiles
SP-08	SP-008-062008	Volatiles
SP-09	SP-009-062008	Volatiles
SP-10	SP-010-062008	Volatiles
SP-11	SP-011-062008	Volatiles
SP-12	SP-012-062008	Volatiles
SP-13	SP-013-062008	Volatiles
SP-14	SP-014-062008	Volatiles
SP-15	SP-015-062008	Volatiles
SP-16	SP-016-062008	Volatiles
SP-17	SP-017-062008	Volatiles
SP-18	SP-018-062008	Volatiles
SP-19	SP-019-062008	Volatiles
SP-20	SP-020-062008	Volatiles

Notes:

[1] = Volatiles by EPA Method 8260

[2] = Only Seeps and Drain tiles flowing at time of collection were sampled as requested.

Table 2-1
Sample Collection Summary
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	Quality Control Samples	MS/MSD Samples	Date Sampled	Date Received by Laboratory	COC ID	Laboratory ID	SDG	Analyses
								VOCs
Field Samples								
DT-001-062008			6/19/2008	6/20/2008	None	756884	126124	●
		DT-001-062008MS	6/19/2008	6/20/2008	None	756884MS	126124	●
		DT-001-062008MSD	6/19/2008	6/20/2008	None	756884MD	126124	●
DT-002-062008			6/19/2008	6/20/2008	None	756885	126124	●
	DT-202-062008		6/19/2008	6/20/2008	None	756886	126124	●
		DT-002-062008MS	6/19/2008	6/20/2008	None			
		DT-002-062008MSD	6/19/2008	6/20/2008	None			
DT-003-062008			6/18/2008	6/20/2008	None	756874	126124	●
DT-007-062008			6/18/2008	6/20/2008	None	756875	126124	●
DT-011-062008			6/18/2008	6/20/2008	None	756876	126124	●
DT-012-062008			6/18/2008	6/20/2008	None	756881	126124	●
DT-013-062008			6/18/2008	6/20/2008	None	756877	126124	●
DT-015-062008			6/18/2008	6/20/2008	None	756880	126124	●
	DT-215-062008		6/18/2008	6/20/2008	None	756882	126124	●
DT-017-062008			6/18/2008	6/20/2008	None	756878	126124	●
	DT-217-062008		6/18/2008	6/20/2008	None	756879	126124	●
SP-001-062008			6/18/2008	6/20/2008	None	756883	126124	●
SP-006-062008			6/17/2008	6/20/2008	None	756864	126124	●
SP-007-062008			6/17/2008	6/20/2008	None	756863	126124	●
SP-008-062008			6/17/2008	6/20/2008	None	756862	126124	●
SP-009-062008			6/17/2008	6/20/2008	None	756861	126124	●
SP-010-062008			6/17/2008	6/20/2008	None	756866	126124	●
SP-011-062008			6/17/2008	6/20/2008	None	756858	126124	●
SP-012-062008			6/17/2008	6/20/2008	None	756860	126124	●

Table 2-1
Sample Collection Summary
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	Quality Control Samples	MS/MSD Samples	Date Sampled	Date Received by Laboratory	COC ID	Laboratory ID	SDG	Analyses
								VOCs
SP-013-062008			6/17/2008	6/20/2008	None	756867	126124	●
SP-014-062008			6/17/2008	6/20/2008	None	756870	126124	●
SP-015-062008			6/17/2008	6/20/2008	None	756872	126124	●
SP-016-062008			6/17/2008	6/20/2008	None	756865	126124	●
SP-017-062008			6/17/2008	6/20/2008	None	756868	126124	●
SP-018-062008			6/17/2008	6/20/2008	None	756869	126124	●
SP-019-062008			6/17/2008	6/20/2008	None	756871	126124	●
		SP-019-062008MS	6/17/2008	6/20/2008	None	756871MS	126124	●
		SP-019-062008MSD	6/17/2008	6/20/2008	None	756871MD	126124	●
SP-020-062008			6/17/2008	6/20/2008	None	756873	126124	●
Trip Blanks								
TRB-211-062008			6/17/2008	6/20/2008	None	756859	126124	●

Notes:

● = Sample was collected for the indicated analysis
COC = Chain of Custody Record
ID = Identification
MS/MSD Matrix Spike/Matrix Spike Duplicate
SDG = Sample Delivery Group
VOCs = Volatile Organic Compounds
The MS/MSD collected on sample DT-002-062008 was not analyzed as only two MS/MSD pairs were required to meet the 1:20 criteria.

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		DT-001	DT-002	DT-002	DT-003	DT-007	DT-011
Field Sample ID:		DT-001-062008	DT-002-062008	DT-202-062008	DT-003-062008	DT-007-062008	DT-011-062008
Lab Sample ID:		756884	756885	756886	756874	756875	756876
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/19/2008	6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Field Duplicate	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	0.37 J	0.31 J
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		DT-001	DT-002	DT-002	DT-003	DT-007	DT-011
Field Sample ID:		DT-001-062008	DT-002-062008	DT-202-062008	DT-003-062008	DT-007-062008	DT-011-062008
Lab Sample ID:		756884	756885	756886	756874	756875	756876
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/19/2008	6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Original Sample	Field Duplicate	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/l	5 U	2.1 J	2.3 J	5 U	5 U	5 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	0.37 J	0.31 J
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-001	DT-002	DT-002	DT-003	DT-007	DT-011
	Field Sample ID:	DT-001-062008	DT-002-062008	DT-202-062008	DT-003-062008	DT-007-062008	DT-011-062008
	Lab Sample ID:	756884	756885	756886	756874	756875	756876
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/19/2008	6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Field Duplicate	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	1 U	0.45 J	0.42 J	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	1 U	1 U	1 U	1 U	8.0	10
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-012	DT-013	DT-015	DT-015	DT-017	DT-017
	Field Sample ID:	DT-012-062008	DT-013-062008	DT-015-062008	DT-215-062008	DT-017-062008	DT-217-062008
	Lab Sample ID:	756881	756877	756880	756882	756878	756879
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Field Duplicate	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	0.21 J	1 U	1.5	1.4	1 U	1 U
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-012	DT-013	DT-015	DT-015	DT-017	DT-017
	Field Sample ID:	DT-012-062008	DT-013-062008	DT-015-062008	DT-215-062008	DT-017-062008	DT-217-062008
	Lab Sample ID:	756881	756877	756880	756882	756878	756879
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Field Duplicate	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/l	5 U	5 U	2.4 J	5 U	5 U	5 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	0.21 J	1 U	1.5	1.4	1 U	1 U
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-012	DT-013	DT-015	DT-015	DT-017	DT-017
	Field Sample ID:	DT-012-062008	DT-013-062008	DT-015-062008	DT-215-062008	DT-017-062008	DT-217-062008
	Lab Sample ID:	756881	756877	756880	756882	756878	756879
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Field Duplicate	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	1 U	1 U	0.29 J	0.28 J	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	6.6	1 U	28	28	3.6	3.6
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		SP-001	SP-006	SP-006	SP-007	SP-007	SP-008
Field Sample ID:		SP-001-062008	SP-006-062008	SP-006-062008	SP-007-062008	SP-007-062008	SP-008-062008
Lab Sample ID:		756883	756864	756864D1	756863	756863D1	756862
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	DL 2	I 1	DL 2	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U		1 U		1 U
1,1-Dichloroethene	ug/l	1 U	1 U		1 U		1 U
1,1-Dichloropropene	ug/l	1 U	1 U		1 U		1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U		1 U		1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U		1 U		1 U
1,2-Dibromoethane	ug/l	1 U	1 U		1 U		1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,2-Dichloroethane	ug/l	1 U	1 U		1 U		1 U
1,2-Dichloroethene	ug/l	0.77 J	2.1		2.2		2.2
1,2-Dichloropropane	ug/l	1 U	1 U		1 U		1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,3-Dichloropropane	ug/l	1 U	1 U		1 U		1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U
2-Butanone	ug/l	5 U	5 U		5 U		5 U
2-Chlorotoluene	ug/l	1 U	1 U		1 U		1 U
2-Hexanone	ug/l	5 U	5 U		5 U		5 U
4-Chlorotoluene	ug/l	1 U	1 U		1 U		1 U
4-Isopropyltoluene	ug/l	1 U	1 U		1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-001	SP-006	SP-006	SP-007	SP-007	SP-008
	Field Sample ID:	SP-001-062008	SP-006-062008	SP-006-062008	SP-007-062008	SP-007-062008	SP-008-062008
	Lab Sample ID:	756883	756864	756864D1	756863	756863D1	756862
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	DL 2	I 1	DL 2	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U		5 U		5 U
Acetone	ug/l	5 U	5 U		5 U		5 U
Benzene	ug/l	1 U	1 U		1 U		1 U
Bromobenzene	ug/l	1 U	1 U		1 U		1 U
Bromochloromethane	ug/l	1 U	1 U		1 U		1 U
Bromodichloromethane	ug/l	1 U	1 U		1 U		1 U
Bromoform	ug/l	1 U	1 U		1 U		1 U
Bromomethane	ug/l	1 U	1 U		1 U		1 U
Carbon disulfide	ug/l	1 U	1 U		1 U		1 U
Carbon tetrachloride	ug/l	1 U	1 U		1 U		1 U
Chlorobenzene	ug/l	1 U	1 U		1 U		1 U
Chloroethane	ug/l	1 U	1 U		1 U		1 U
Chloroform	ug/l	0.67 J	1 U		1 U		1 U
Chloromethane	ug/l	1 U	1 U		1 U		1 U
cis-1,2-Dichloroethene	ug/l	0.77 J	2.1		2.2		2.2
cis-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U
Dibromochloromethane	ug/l	1 U	1 U		1 U		1 U
Dibromomethane	ug/l	1 U	1 U		1 U		1 U
Dichlorodifluoromethane	ug/l	1 U	1 U		1 U		1 U
Ethylbenzene	ug/l	1 U	1 U		1 U		1 U
Hexachlorobutadiene	ug/l	1 U	1 U		1 U		1 U
Isopropylbenzene	ug/l	1 U	1 U		1 U		1 U
Methyl tert butyl ether	ug/l	1 U	1 U		1 U		1 U
Methylene chloride	ug/l	1 U	1 U		1 U		1 U
m,p-Xylene	ug/l	1 U	1 U		1 U		1 U
Naphthalene	ug/l	1 U	1 U		1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		SP-001	SP-006	SP-006	SP-007	SP-007	SP-008
Field Sample ID:		SP-001-062008	SP-006-062008	SP-006-062008	SP-007-062008	SP-007-062008	SP-008-062008
Lab Sample ID:		756883	756864	756864D1	756863	756863D1	756862
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/18/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	DL 2	I 1	DL 2	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U		1 U		1 U
n-Propylbenzene	ug/l	1 U	1 U		1 U		1 U
o-Xylene	ug/l	1 U	1 U		1 U		1 U
sec-Butylbenzene	ug/l	1 U	1 U		1 U		1 U
Styrene	ug/l	1 U	1 U		1 U		1 U
tert-Butylbenzene	ug/l	1 U	1 U		1 U		1 U
Tetrachloroethene	ug/l	1 U	1 U		1 U		1 U
Toluene	ug/l	1 U	1 U		1 U		1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U		1 U		1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U
Trichloroethene	ug/l	12		49		52	
Trichlorofluoromethane	ug/l	1 U	1 U		1 U		1 U
Vinyl chloride	ug/l	1 U	1 U		1 U		1 U
Xylene (Total)	ug/l	1 U	1 U		1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-008	SP-009	SP-009	SP-010	SP-011	SP-011
	Field Sample ID:	SP-008-062008	SP-009-062008	SP-009-062008	SP-010-062008	SP-011-062008	SP-011-062008
	Lab Sample ID:	756862D1	756861	756861D1	756866	756858	756858D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	DL 2	I 1	DL 2.2	I 1	I 1	DL 2.88
VOCs	**Units**						
1,1-Dichloroethane	ug/l	2 U	1 U		1 U	1 U	
1,1-Dichloroethene	ug/l	2 U	1 U		1 U	1 U	
1,1-Dichloropropene	ug/l	2 U	1 U		1 U	1 U	
1,1,1-Trichloroethane	ug/l	2 U	1 U		1 U	1 U	
1,1,1,2-Tetrachloroethane	ug/l	2 U	1 U		1 U	1 U	
1,1,2,2-Tetrachloroethane	ug/l	2 U	1 U		1 U	1 U	
1,1,2-Trichloroethane	ug/l	2 U	1 U		1 U	1 U	
1,1,2-Trichlorotrifluoroethane	ug/l	2 U	1 U		1 U	1 U	
1,2-Dibromo-3-chloropropane	ug/l	2 U	1 U		1 U	1 U	
1,2-Dibromoethane	ug/l	2 U	1 U		1 U	1 U	
1,2-Dichlorobenzene	ug/l	2 U	1 U		1 U	1 U	
1,2-Dichloroethane	ug/l	2 U	1 U		1 U	1 U	
1,2-Dichloroethene	ug/l	2.2	2.4		2.2	2.5	
1,2-Dichloropropane	ug/l	2 U	1 U		1 U	1 U	
1,2,3-Trichlorobenzene	ug/l	2 U	1 U		1 U	1 U	
1,2,4-Trichlorobenzene	ug/l	2 U	1 U		1 U	1 U	
1,2,4-Trimethylbenzene	ug/l	2 U	1 U		1 U	1 U	
1,3-Dichlorobenzene	ug/l	2 U	1 U		1 U	1 U	
1,3-Dichloropropane	ug/l	2 U	1 U		1 U	1 U	
1,3,5-Trimethylbenzene	ug/l	2 U	1 U		1 U	1 U	
1,4-Dichlorobenzene	ug/l	2 U	1 U		1 U	1 U	
2-Butanone	ug/l	10 U	5 U		5 U	5 U	
2-Chlorotoluene	ug/l	2 U	1 U		1 U	1 U	
2-Hexanone	ug/l	10 U	5 U		5 U	5 U	
4-Chlorotoluene	ug/l	2 U	1 U		1 U	1 U	
4-Isopropyltoluene	ug/l	2 U	1 U		1 U	1 U	

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-008	SP-009	SP-009	SP-010	SP-011	SP-011
	Field Sample ID:	SP-008-062008	SP-009-062008	SP-009-062008	SP-010-062008	SP-011-062008	SP-011-062008
	Lab Sample ID:	756862D1	756861	756861D1	756866	756858	756858D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	DL 2	I 1	DL 2.2	I 1	I 1	DL 2.88
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	10 U	5 U		5 U	5 U	
Acetone	ug/l	10 U	5 U		2.5 J	5 U	
Benzene	ug/l	2 U	1 U		1 U	1 U	
Bromobenzene	ug/l	2 U	1 U		1 U	1 U	
Bromochloromethane	ug/l	2 U	1 U		1 U	1 U	
Bromodichloromethane	ug/l	2 U	1 U		1 U	1 U	
Bromoform	ug/l	2 U	1 U		1 U	1 U	
Bromomethane	ug/l	2 U	1 U		1 U	1 U	
Carbon disulfide	ug/l	2 U	1 U		1 U	1 U	
Carbon tetrachloride	ug/l	2 U	1 U		1 U	1 U	
Chlorobenzene	ug/l	2 U	1 U		1 U	1 U	
Chloroethane	ug/l	2 U	1 U		1 U	1 U	
Chloroform	ug/l	2 U	1 U		1 U	1 U	
Chloromethane	ug/l	2 U	1 U		1 U	1 U	
cis-1,2-Dichloroethene	ug/l	2.2	2.4		2.2	2.5	
cis-1,3-Dichloropropene	ug/l	2 U	1 U		1 U	1 U	
Dibromochloromethane	ug/l	2 U	1 U		1 U	1 U	
Dibromomethane	ug/l	2 U	1 U		1 U	1 U	
Dichlorodifluoromethane	ug/l	2 U	1 U		1 U	1 U	
Ethylbenzene	ug/l	2 U	1 U		1 U	1 U	
Hexachlorobutadiene	ug/l	2 U	1 U		1 U	1 U	
Isopropylbenzene	ug/l	2 U	1 U		1 U	1 U	
Methyl tert butyl ether	ug/l	2 U	1 U		1 U	1 U	
Methylene chloride	ug/l	2 U	1 U		1 U	1 U	
m,p-Xylene	ug/l	2 U	1 U		1 U	1 U	
Naphthalene	ug/l	2 U	1 U		1 U	1 U	

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-008	SP-009	SP-009	SP-010	SP-011	SP-011
	Field Sample ID:	SP-008-062008	SP-009-062008	SP-009-062008	SP-010-062008	SP-011-062008	SP-011-062008
	Lab Sample ID:	756862D1	756861	756861D1	756866	756858	756858D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	DL 2	I 1	DL 2.2	I 1	I 1	DL 2.88
VOCs	**Units**						
n-Butylbenzene	ug/l		1 U		1 U	1 U	
n-Propylbenzene	ug/l		1 U		1 U	1 U	
o-Xylene	ug/l		1 U		1 U	1 U	
sec-Butylbenzene	ug/l		1 U		1 U	1 U	
Styrene	ug/l		1 U		1 U	1 U	
tert-Butylbenzene	ug/l		1 U		1 U	1 U	
Tetrachloroethene	ug/l		1 U		1 U	1 U	
Toluene	ug/l		1 U		0.23 J	1 U	
trans-1,2-Dichloroethene	ug/l		1 U		1 U	1 U	
trans-1,3-Dichloropropene	ug/l		1 U		1 U	1 U	
Trichloroethene	ug/l	52		56	41		73
Trichlorofluoromethane	ug/l		1 U		1 U	1 U	
Vinyl chloride	ug/l		1 U		1 U	1 U	
Xylene (Total)	ug/l		1 U		1 U	1 U	

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	SP-012	SP-012	SP-013	SP-014	SP-014	SP-015
Field Sample ID:	SP-012-062008	SP-012-062008	SP-013-062008	SP-014-062008	SP-014-062008	SP-015-062008
Lab Sample ID:	756860	756860D1	756867	756870	756870D1	756872
Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:	I 1	DL 1.91	I 1	I 1	DL 3.23	I 1
VOCs	**Units**					
1,1-Dichloroethane	ug/l	1 U		1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U		1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U		1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U		1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U		1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U		1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U		1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U		1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U		1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U		1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U		1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U		1 U	1 U	1 U
1,2-Dichloroethene	ug/l	1.6		2.8	2.2	0.42 J
1,2-Dichloropropane	ug/l	1 U		1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U		1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U		1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U		1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U		1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U		1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U		1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U		1 U	1 U	1 U
2-Butanone	ug/l	5 U		5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U		1 U	1 U	1 U
2-Hexanone	ug/l	5 U		5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U		1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U		1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	SP-012	SP-012	SP-013	SP-014	SP-014	SP-015
Field Sample ID:	SP-012-062008	SP-012-062008	SP-013-062008	SP-014-062008	SP-014-062008	SP-015-062008
Lab Sample ID:	756860	756860D1	756867	756870	756870D1	756872
Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:	I 1	DL 1.91	I 1	I 1	DL 3.23	I 1
VOCs	**Units**					
4-Methyl-2-pentanone	ug/l	5 U		5 U	5 U	5 U
Acetone	ug/l	2.5 J		5 U	5 U	5 U
Benzene	ug/l	1 U		1 U	1 U	1 U
Bromobenzene	ug/l	1 U		1 U	1 U	1 U
Bromochloromethane	ug/l	1 U		1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U		1 U	1 U	1 U
Bromoform	ug/l	1 U		1 U	1 U	1 U
Bromomethane	ug/l	1 U		1 U	1 U	1 U
Carbon disulfide	ug/l	1 U		1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U		1 U	1 U	1 U
Chlorobenzene	ug/l	1 U		1 U	1 U	1 U
Chloroethane	ug/l	1 U		1 U	1 U	1 U
Chloroform	ug/l	1 U		1 U	0.27 J	1 U
Chloromethane	ug/l	1 U		1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1.6		2.8	2.2	0.42 J
cis-1,3-Dichloropropene	ug/l	1 U		1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U		1 U	1 U	1 U
Dibromomethane	ug/l	1 U		1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U		1 U	1 U	1 U
Ethylbenzene	ug/l	1 U		1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U		1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U		1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U		1 U	1 U	1 U
Methylene chloride	ug/l	1 U		1 U	1 U	1 U
m,p-Xylene	ug/l	1 U		1 U	1 U	1 U
Naphthalene	ug/l	1 U		1 U	1 U	1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-012	SP-012	SP-013	SP-014	SP-014	SP-015
	Field Sample ID:	SP-012-062008	SP-012-062008	SP-013-062008	SP-014-062008	SP-014-062008	SP-015-062008
	Lab Sample ID:	756860	756860D1	756867	756870	756870D1	756872
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	DL 1.91	I 1	I 1	DL 3.23	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U		1 U	1 U		1 U
n-Propylbenzene	ug/l	1 U		1 U	1 U		1 U
o-Xylene	ug/l	1 U		1 U	1 U		1 U
sec-Butylbenzene	ug/l	1 U		1 U	1 U		1 U
Styrene	ug/l	1 U		1 U	1 U		1 U
tert-Butylbenzene	ug/l	1 U		1 U	1 U		1 U
Tetrachloroethene	ug/l	1 U		1 U	1 U		1 U
Toluene	ug/l	1 U		0.32 J	1 U		1 U
trans-1,2-Dichloroethene	ug/l	1 U		1 U	1 U		1 U
trans-1,3-Dichloropropene	ug/l	1 U		1 U	1 U		1 U
Trichloroethene	ug/l		49	43		87	28
Trichlorofluoromethane	ug/l	1 U		1 U	1 U		1 U
Vinyl chloride	ug/l	1 U		1 U	1 U		1 U
Xylene (Total)	ug/l	1 U		1 U	1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-016	SP-017	SP-017	SP-018	SP-018	SP-019
	Field Sample ID:	SP-016-062008	SP-017-062008	SP-017-062008	SP-018-062008	SP-018-062008	SP-019-062008
	Lab Sample ID:	756865	756868	756868D1	756869	756869D1	756871
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	DL 3.52	I 1	DL 3.24	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U		1 U		1 U
1,1-Dichloroethene	ug/l	1 U	1 U		1 U		1 U
1,1-Dichloropropene	ug/l	1 U	1 U		1 U		1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U		1 U		1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U		1 U		1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U		1 U		1 U
1,2-Dibromoethane	ug/l	1 U	1 U		1 U		1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,2-Dichloroethane	ug/l	1 U	1 U		1 U		1 U
1,2-Dichloroethene	ug/l	1 U	2.4		2.9		2.5
1,2-Dichloropropane	ug/l	1 U	1 U		1 U		1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U
1,3-Dichloropropane	ug/l	1 U	1 U		1 U		1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U
2-Butanone	ug/l	5 U	5 U		5 U		5 U
2-Chlorotoluene	ug/l	1 U	1 U		1 U		1 U
2-Hexanone	ug/l	5 U	5 U		5 U		5 U
4-Chlorotoluene	ug/l	1 U	1 U		1 U		1 U
4-Isopropyltoluene	ug/l	1 U	1 U		1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-016	SP-017	SP-017	SP-018	SP-018	SP-019
	Field Sample ID:	SP-016-062008	SP-017-062008	SP-017-062008	SP-018-062008	SP-018-062008	SP-019-062008
	Lab Sample ID:	756865	756868	756868D1	756869	756869D1	756871
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	DL 3.52	I 1	DL 3.24	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U		5 U		5 U
Acetone	ug/l	7.5	5 U		5 U		5 U
Benzene	ug/l	1 U	1 U		1 U		1 U
Bromobenzene	ug/l	1 U	1 U		1 U		1 U
Bromochloromethane	ug/l	1 U	1 U		1 U		1 U
Bromodichloromethane	ug/l	1 U	1 U		1 U		1 U
Bromoform	ug/l	1 U	1 U		1 U		1 U
Bromomethane	ug/l	1 U	1 U		1 U		1 U
Carbon disulfide	ug/l	1 U	1 U		1 U		1 U
Carbon tetrachloride	ug/l	1 U	1 U		1 U		1 U
Chlorobenzene	ug/l	1 U	1 U		1 U		1 U
Chloroethane	ug/l	1 U	1 U		1 U		1 U
Chloroform	ug/l	1 U	0.27 J		0.24 J		0.29 J
Chloromethane	ug/l	1 U	1 U		1 U		1 U
cis-1,2-Dichloroethene	ug/l	1 U	2.4		2.9		2.5
cis-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U
Dibromochloromethane	ug/l	1 U	1 U		1 U		1 U
Dibromomethane	ug/l	1 U	1 U		1 U		1 U
Dichlorodifluoromethane	ug/l	1 U	1 U		1 U		1 U
Ethylbenzene	ug/l	1 U	1 U		1 U		1 U
Hexachlorobutadiene	ug/l	1 U	1 U		1 U		1 U
Isopropylbenzene	ug/l	1 U	1 U		1 U		1 U
Methyl tert butyl ether	ug/l	1 U	1 U		1 U		1 U
Methylene chloride	ug/l	1 U	1 U		1 U		1 U
m,p-Xylene	ug/l	1 U	1 U		1 U		1 U
Naphthalene	ug/l	1 U	1 U		1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		SP-016	SP-017	SP-017	SP-018	SP-018	SP-019
Field Sample ID:		SP-016-062008	SP-017-062008	SP-017-062008	SP-018-062008	SP-018-062008	SP-019-062008
Lab Sample ID:		756865	756868	756868D1	756869	756869D1	756871
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
Field QC:		Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	DL 3.52	I 1	DL 3.24	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U		1 U		1 U
n-Propylbenzene	ug/l	1 U	1 U		1 U		1 U
o-Xylene	ug/l	1 U	1 U		1 U		1 U
sec-Butylbenzene	ug/l	1 U	1 U		1 U		1 U
Styrene	ug/l	1 U	1 U		1 U		1 U
tert-Butylbenzene	ug/l	1 U	1 U		1 U		1 U
Tetrachloroethene	ug/l	1 U	1 U		1 U		1 U
Toluene	ug/l	1 U	1 U		1 U		1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U		1 U		1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U
Trichloroethene	ug/l	1 U		93		82	
Trichlorofluoromethane	ug/l	1 U	1 U		1 U		1 U
Vinyl chloride	ug/l	1 U	1 U		1 U		1 U
Xylene (Total)	ug/l	1 U	1 U		1 U		1 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	SP-019	SP-020	SP-020
Field Sample ID:	SP-019-062008	SP-020-062008	SP-020-062008
Lab Sample ID:	756871D1	756873	756873D1
Lab Name:	TALVT	TALVT	TALVT
Sample Date:	6/17/2008	6/17/2008	6/17/2008
Field QC:	Original Sample	Original Sample	Original Sample
Analysis Information:	DL 4.07	I 1	DL 2.9
VOCs	**Units**		
1,1-Dichloroethane	ug/l	1 U	
1,1-Dichloroethene	ug/l	1 U	
1,1-Dichloropropene	ug/l	1 U	
1,1,1-Trichloroethane	ug/l	1 U	
1,1,1,2-Tetrachloroethane	ug/l	1 U	
1,1,2,2-Tetrachloroethane	ug/l	1 U	
1,1,2-Trichloroethane	ug/l	1 U	
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	
1,2-Dibromo-3-chloropropane	ug/l	1 U	
1,2-Dibromoethane	ug/l	1 U	
1,2-Dichlorobenzene	ug/l	1 U	
1,2-Dichloroethane	ug/l	1 U	
1,2-Dichloroethene	ug/l	2.5	
1,2-Dichloropropane	ug/l	1 U	
1,2,3-Trichlorobenzene	ug/l	1 U	
1,2,4-Trichlorobenzene	ug/l	1 U	
1,2,4-Trimethylbenzene	ug/l	1 U	
1,3-Dichlorobenzene	ug/l	1 U	
1,3-Dichloropropane	ug/l	1 U	
1,3,5-Trimethylbenzene	ug/l	1 U	
1,4-Dichlorobenzene	ug/l	1 U	
2-Butanone	ug/l	5 U	
2-Chlorotoluene	ug/l	1 U	
2-Hexanone	ug/l	5 U	
4-Chlorotoluene	ug/l	1 U	
4-Isopropyltoluene	ug/l	1 U	

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	SP-019	SP-020	SP-020
Field Sample ID:	SP-019-062008	SP-020-062008	SP-020-062008
Lab Sample ID:	756871D1	756873	756873D1
Lab Name:	TALVT	TALVT	TALVT
Sample Date:	6/17/2008	6/17/2008	6/17/2008
Field QC:	Original Sample	Original Sample	Original Sample
Analysis Information:	DL 4.07	I 1	DL 2.9
VOCs	**Units**		
4-Methyl-2-pentanone	ug/l	5 U	
Acetone	ug/l	2.8 J	
Benzene	ug/l	1 U	
Bromobenzene	ug/l	1 U	
Bromochloromethane	ug/l	1 U	
Bromodichloromethane	ug/l	1 U	
Bromoform	ug/l	1 U	
Bromomethane	ug/l	1 U	
Carbon disulfide	ug/l	1 U	
Carbon tetrachloride	ug/l	1 U	
Chlorobenzene	ug/l	1 U	
Chloroethane	ug/l	1 U	
Chloroform	ug/l	0.20 J	
Chloromethane	ug/l	1 U	
cis-1,2-Dichloroethene	ug/l	2.5	
cis-1,3-Dichloropropene	ug/l	1 U	
Dibromochloromethane	ug/l	1 U	
Dibromomethane	ug/l	1 U	
Dichlorodifluoromethane	ug/l	1 U	
Ethylbenzene	ug/l	1 U	
Hexachlorobutadiene	ug/l	1 U	
Isopropylbenzene	ug/l	1 U	
Methyl tert butyl ether	ug/l	1 U	
Methylene chloride	ug/l	1 U	
m,p-Xylene	ug/l	1 U	
Naphthalene	ug/l	1 U	

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		SP-019	SP-020	SP-020
Field Sample ID:		SP-019-062008	SP-020-062008	SP-020-062008
Lab Sample ID:		756871D1	756873	756873D1
Lab Name:		TALVT	TALVT	TALVT
Sample Date:		6/17/2008	6/17/2008	6/17/2008
Field QC:		Original Sample	Original Sample	Original Sample
Analysis Information:		DL 4.07	I 1	DL 2.9
VOCs	**Units**			
n-Butylbenzene	ug/l		1 U	
n-Propylbenzene	ug/l		1 U	
o-Xylene	ug/l		1 U	
sec-Butylbenzene	ug/l		1 U	
Styrene	ug/l		1 U	
tert-Butylbenzene	ug/l		1 U	
Tetrachloroethene	ug/l		1 U	
Toluene	ug/l		1 U	
trans-1,2-Dichloroethene	ug/l		1 U	
trans-1,3-Dichloropropene	ug/l		1 U	
Trichloroethene	ug/l	100		79
Trichlorofluoromethane	ug/l		1 U	
Vinyl chloride	ug/l		1 U	
Xylene (Total)	ug/l		1 U	

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		DT-002	DT-002	DT-007	DT-011	DT-012	DT-015
Field Sample ID:		DT-002-062008	DT-202-062008	DT-007-062008	DT-011-062008	DT-012-062008	DT-015-062008
Lab Sample ID:		756885	756886	756875	756876	756881	756880
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Original Sample	Original Sample	Original Sample
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,2-Dichloroethene	ug/l			0.37 J	0.31 J	0.21 J	1.5
Acetone	ug/l	2.1 J	2.3 J				2.4 J
Chloroform	ug/l						
cis-1,2-Dichloroethene	ug/l			0.37 J	0.31 J	0.21 J	1.5
Toluene	ug/l	0.45 J	0.42 J				0.29 J
Trichloroethene	ug/l			8.0	10	6.6	28

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-015	DT-017	DT-017	SP-001	SP-006	SP-006
	Field Sample ID:	DT-215-062008	DT-017-062008	DT-217-062008	SP-001-062008	SP-006-062008	SP-006-062008
	Lab Sample ID:	756882	756878	756879	756883	756864	756864D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/17/2008	6/17/2008
	Field QC:	Field Duplicate	Original Sample	Field Duplicate	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	DL 2
VOCs	**Units**						
1,2-Dichloroethene	ug/l	1.4			0.77 J	2.1	
Acetone	ug/l						
Chloroform	ug/l				0.67 J		
cis-1,2-Dichloroethene	ug/l	1.4			0.77 J	2.1	
Toluene	ug/l	0.28 J					
Trichloroethene	ug/l	28	3.6	3.6	12		49

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-007	SP-007	SP-008	SP-008	SP-009	SP-009
	Field Sample ID:	SP-007-062008	SP-007-062008	SP-008-062008	SP-008-062008	SP-009-062008	SP-009-062008
	Lab Sample ID:	756863	756863D1	756862	756862D1	756861	756861D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	DL 2	I 1	DL 2	I 1	DL 2.2
VOCs	**Units**						
1,2-Dichloroethene	ug/l	2.2		2.2		2.4	
Acetone	ug/l						
Chloroform	ug/l						
cis-1,2-Dichloroethene	ug/l	2.2		2.2		2.4	
Toluene	ug/l						
Trichloroethene	ug/l		52		52		56

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-010	SP-011	SP-011	SP-012	SP-012	SP-013
	Field Sample ID:	SP-010-062008	SP-011-062008	SP-011-062008	SP-012-062008	SP-012-062008	SP-013-062008
	Lab Sample ID:	756866	756858	756858D1	756860	756860D1	756867
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	I 1	DL 2.88	I 1	DL 1.91	I 1
VOCs	**Units**						
1,2-Dichloroethene	ug/l	2.2	2.5		1.6		2.8
Acetone	ug/l	2.5 J			2.5 J		
Chloroform	ug/l						
cis-1,2-Dichloroethene	ug/l	2.2	2.5		1.6		2.8
Toluene	ug/l	0.23 J					0.32 J
Trichloroethene	ug/l	41		73		49	43

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-014	SP-014	SP-015	SP-016	SP-017	SP-017
	Field Sample ID:	SP-014-062008	SP-014-062008	SP-015-062008	SP-016-062008	SP-017-062008	SP-017-062008
	Lab Sample ID:	756870	756870D1	756872	756865	756868	756868D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	DL 3.23	I 1	I 1	I 1	DL 3.52
VOCs	**Units**						
1,2-Dichloroethene	ug/l	2.2		0.42 J		2.4	
Acetone	ug/l				7.5		
Chloroform	ug/l	0.27 J				0.27 J	
cis-1,2-Dichloroethene	ug/l	2.2		0.42 J		2.4	
Toluene	ug/l						
Trichloroethene	ug/l		87	28			93

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	SP-018	SP-018	SP-019	SP-019	SP-020	SP-020
	Field Sample ID:	SP-018-062008	SP-018-062008	SP-019-062008	SP-019-062008	SP-020-062008	SP-020-062008
	Lab Sample ID:	756869	756869D1	756871	756871D1	756873	756873D1
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
	Field QC:	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample	Original Sample
	Analysis Information:	I 1	DL 3.24	I 1	DL 4.07	I 1	DL 2.9
VOCs	**Units**						
1,2-Dichloroethene	ug/l	2.9		2.5		2.5	
Acetone	ug/l					2.8 J	
Chloroform	ug/l	0.24 J		0.29 J		0.20 J	
cis-1,2-Dichloroethene	ug/l	2.9		2.5		2.5	
Toluene	ug/l						
Trichloroethene	ug/l		82		100		79

Table 3 - 2
Detections - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:		DT-002	DT-002	DT-015	DT-015	DT-017	DT-017
Field Sample ID:		DT-002-062008	DT-202-062008	DT-015-062008	DT-215-062008	DT-017-062008	DT-217-062008
Lab Sample ID:		756885	756886	756880	756882	756878	756879
Lab Name:		TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
Sample Date:		6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
Field QC:		Original Sample	Field Duplicate	Original Sample	Field Duplicate	Original Sample	Field Duplicate
Analysis Information:		I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	ug/l	1 U	1 U	1.5	1.4	1 U	1 U
1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-002	DT-002	DT-015	DT-015	DT-017	DT-017
	Field Sample ID:	DT-002-062008	DT-202-062008	DT-015-062008	DT-215-062008	DT-017-062008	DT-217-062008
	Lab Sample ID:	756885	756886	756880	756882	756878	756879
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Field Duplicate	Original Sample	Field Duplicate	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
4-Methyl-2-pentanone	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/l	2.1 J	2.3 J	2.4 J	5 U	5 U	5 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	1 U	1 U	1.5	1.4	1 U	1 U
cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

	Station ID:	DT-002	DT-002	DT-015	DT-015	DT-017	DT-017
	Field Sample ID:	DT-002-062008	DT-202-062008	DT-015-062008	DT-215-062008	DT-017-062008	DT-217-062008
	Lab Sample ID:	756885	756886	756880	756882	756878	756879
	Lab Name:	TALVT	TALVT	TALVT	TALVT	TALVT	TALVT
	Sample Date:	6/19/2008	6/19/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
	Field QC:	Original Sample	Field Duplicate	Original Sample	Field Duplicate	Original Sample	Field Duplicate
	Analysis Information:	I 1	I 1	I 1	I 1	I 1	I 1
VOCs	**Units**						
n-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	0.45 J	0.42 J	0.29 J	0.28 J	1 U	1 U
trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/l	1 U	1 U	28	28	3.6	3.6
Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (Total)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 4
Trip Blank Results
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	Trip Blank
Field Sample ID:	TRB-211-062008
Lab Sample ID:	756859
Lab Name:	TALVT
Sample Date:	6/17/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
1,1-Dichloroethane	ug/l	1 U
1,1-Dichloroethene	ug/l	1 U
1,1-Dichloropropene	ug/l	1 U
1,1,1-Trichloroethane	ug/l	1 U
1,1,1,2-Tetrachloroethane	ug/l	1 U
1,1,2,2-Tetrachloroethane	ug/l	1 U
1,1,2-Trichloroethane	ug/l	1 U
1,1,2-Trichlorotrifluoroethane	ug/l	1 U
1,2-Dibromo-3-chloropropane	ug/l	1 U
1,2-Dibromoethane	ug/l	1 U
1,2-Dichlorobenzene	ug/l	1 U
1,2-Dichloroethane	ug/l	1 U
1,2-Dichloroethene	ug/l	1 U
1,2-Dichloropropane	ug/l	1 U
1,2,3-Trichlorobenzene	ug/l	1 U
1,2,4-Trichlorobenzene	ug/l	1 U
1,2,4-Trimethylbenzene	ug/l	1 U
1,3-Dichlorobenzene	ug/l	1 U
1,3-Dichloropropane	ug/l	1 U
1,3,5-Trimethylbenzene	ug/l	1 U
1,4-Dichlorobenzene	ug/l	1 U
2-Butanone	ug/l	5 U
2-Chlorotoluene	ug/l	1 U
2-Hexanone	ug/l	5 U
4-Chlorotoluene	ug/l	1 U
4-Isopropyltoluene	ug/l	1 U

Table 3 - 4
Trip Blank Results
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	Trip Blank
Field Sample ID:	TRB-211-062008
Lab Sample ID:	756859
Lab Name:	TALVT
Sample Date:	6/17/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
4-Methyl-2-pentanone	ug/l	5 U
Acetone	ug/l	5 U
Benzene	ug/l	1 U
Bromobenzene	ug/l	1 U
Bromochloromethane	ug/l	1 U
Bromodichloromethane	ug/l	1 U
Bromoform	ug/l	1 U
Bromomethane	ug/l	1 U
Carbon disulfide	ug/l	1 U
Carbon tetrachloride	ug/l	1 U
Chlorobenzene	ug/l	1 U
Chloroethane	ug/l	1 U
Chloroform	ug/l	1 U
Chloromethane	ug/l	1 U
cis-1,2-Dichloroethene	ug/l	1 U
cis-1,3-Dichloropropene	ug/l	1 U
Dibromochloromethane	ug/l	1 U
Dibromomethane	ug/l	1 U
Dichlorodifluoromethane	ug/l	1 U
Ethylbenzene	ug/l	1 U
Hexachlorobutadiene	ug/l	1 U
Isopropylbenzene	ug/l	1 U
Methyl tert butyl ether	ug/l	1 U
Methylene chloride	ug/l	1 U
m,p-Xylene	ug/l	1 U
Naphthalene	ug/l	1 U

Table 3 - 4
Trip Blank Results
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Drain Tile and Seep

Station ID:	Trip Blank
Field Sample ID:	TRB-211-062008
Lab Sample ID:	756859
Lab Name:	TALVT
Sample Date:	6/17/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
n-Butylbenzene	ug/l	1 U
n-Propylbenzene	ug/l	1 U
o-Xylene	ug/l	1 U
sec-Butylbenzene	ug/l	1 U
Styrene	ug/l	1 U
tert-Butylbenzene	ug/l	1 U
Tetrachloroethene	ug/l	1 U
Toluene	ug/l	1 U
trans-1,2-Dichloroethene	ug/l	1 U
trans-1,3-Dichloropropene	ug/l	1 U
Trichloroethene	ug/l	1 U
Trichlorofluoromethane	ug/l	1 U
Vinyl chloride	ug/l	1 U
Xylene (Total)	ug/l	1 U

Table 3 - 4
Trip Blank Results
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 4-1
Data Quality Evaluation Results
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Laboratory Result		Data Review Qualifier	Reason for Qualification		Comments	Final Result
										LCS	CR		
DT-015-062008	6/18/2008	126124	756880	VOC	Acetone	µg/L	2.4	J	J	x		High LCS/LCSD %RECs	2.4 J
SP-006-062008	6/17/2008	126124	756864	VOC	TCE	µg/L	53	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	53 Not Used
SP-006-062008DL	6/17/2008	126124	756864D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	49 D
SP-007-062008	6/17/2008	126124	756863	VOC	TCE	µg/L	53	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	53 Not Used
SP-007-062008DL	6/17/2008	126124	756863D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	52 D
SP-008-062008	6/17/2008	126124	756862	VOC	TCE	µg/L	56	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	56 Not Used
SP-008-062008DL	6/17/2008	126124	756862D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	52 D
SP-009-062008	6/17/2008	126124	756861	VOC	TCE	µg/L	59	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	59 Not Used
SP-009-062008DL	6/17/2008	126124	756861D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	56 D
SP-011-062008	6/17/2008	126124	756858	VOC	TCE	µg/L	73	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	73 Not Used
SP-011-062008DL	6/17/2008	126124	756858D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	73 D
SP-012-062008	6/17/2008	126124	756860	VOC	TCE	µg/L	51	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	51 Not Used
SP-012-062008DL	6/17/2008	126124	756860D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	49 D
SP-014-062008	6/17/2008	126124	756870	VOC	TCE	µg/L	89	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	89 Not Used
SP-014-062008DL	6/17/2008	126124	756870D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	87 D
SP-017-062008	6/17/2008	126124	756868	VOC	TCE	µg/L	95	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	95 Not Used
SP-017-062008DL	6/17/2008	126124	756868D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	93 D
SP-018-062008	6/17/2008	126124	756869	VOC	TCE	µg/L	84	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	84 Not Used
SP-018-062008DL	6/17/2008	126124	756869D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	82 D
SP-019-062008	6/17/2008	126124	756871	VOC	TCE	µg/L	110	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	110 Not Used
SP-019-062008DL	6/17/2008	126124	756871D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	100 D
SP-020-062008	6/17/2008	126124	756873	VOC	TCE	µg/L	77	E	Not Used		x	Calibration Range Exceeded Report TCE from Dilution	77 Not Used
SP-020-062008DL	6/17/2008	126124	756873D1	VOC	All Results Except TCE	µg/L	Various	Various	Not Used		x	Only Report TCE from this Analysis	79 D

Notes:

CR = Calibration Range
D1 = Dilution
E = Laboratory qualifier indicating a calibration range exceedance
J = Qualified as estimated
LCS/LCSD = Laboratory Control Sample/ Laboratory Control Sample Duplicate
%REC = Percent Recovery
SDG = Sample Delivery Group
TCE =Trichloroethene
µg/L = micrograms per liter
VOCs = Volatile organic compounds

Table 4-2
VOCs Quality Control Outliers
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Sample ID(s) Requiring Qualification	SDG	Compound	QC Outlier	QC Parameter Control Limit	QC Result
LCS/LCSD					
DT-015-062008	126124	Acetone	LCS /LCSD %REC	60-140%	142% 166%
Dilutions and Reanalyses (E flags are not used in completeness percentage when dilution available)					
SP-006-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	53 E Report as 49 D
SP-007-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	53 E Report as 52 D
SP-008-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	56 E Report as 52 D
SP-009-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	59 E Report as 56 D
SP-011-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	73 E Report as 73 D
SP-012-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	51 E Report as 49 D
SP-014-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	89 E Report as 87 D
SP-017-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	95 E Report as 93 D
SP-018-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	84 E Report as 82 D
SP-019-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	110 E Report as 100 D
SP-020-062008	126124	TCE	Calibration Range Exceedance	Linear Calibration Range	77 E Report as 79 D

Note: The samples above were diluted and reanalyzed. The results for TCE should be reported from the dilutions.

Notes:

D = Result from dilution
E = Exceeds Calibration Range
ID = Identification
LCS/LCSD = Laboratory Control Sample/ Laboratory Control Sample Duplicate
%REC = Percent Recovery
QC = Quality Control
SDG = Sample Delivery Group
TCE = Trichloroethene

Table 5-1
Field Completeness
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned[1]	Number of Samples Collected	Field Completeness
Volatile Organic Compounds	28	28	100%
Totals =	28	28	100.0%
Goal =			95%

Notes:

[1] = Number of samples includes field samples and field duplicate samples.
Only the Seeps and Drain tiles flowing at the time of collection were sampled as requested.

Table 5-2
Analytical Completeness
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters[1]	Acceptable Data[2]	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data[3]	Quality Data Completeness	Quality Data Completeness Goals
Volatile Organic Compounds	1848	1847	99.9%	90%	1847	100%	80%
Totals =	1848	1847	99.9%	95%	1847	100%	80%

Notes:

[1] = Total number of parameters includes field samples and field duplicates.

[2] = Acceptable data is defined as data that passed all quality control (QC) criteria, or data that did not pass QC criteria but had appropriate corrective actions taken. Acceptable data completeness is a measure of laboratory contract compliance. R qualified data with acceptable replacement data are not counted.

[3] = Quality data is a measure of the percentage of usable data points (all non-rejected data).

Table 5-3
Project Completeness
Second Quarter 2008 Drain Tile and Seep Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical[1]	Project Completeness[2]
100%	100%	100%
Project Completeness Goal =		90%

Notes:
[1] = Analytical completeness is the percentage of usable data (i.e. quality data completeness).
[2] = Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

2008 SEEP Sampling 2nd Quarter
1/4

CHAIN OF CUSTODY RECORD

Report to:
Company: FCC
Address: 1746 Cole Blvd Bldg 21 Suite 350
Lakewood Co, 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298-7837
Contract/Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Ralph West
Sampler's Signature: [signature]

Proj. No.: 5403.001
Project Name: MEAD FNOP SEEP Samples

ANALYSIS REQUESTED: 8260B (HCL); 8330 Ext/o.

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2]: VOA (HCL)	A/G 1 Lt. (ICE)	250 ml	P/O	8260B (HCL)	8330 Ext/o.	Lab/Sample ID (Lab Use Only)
W	6/17/08	1400		X	SP-011-062008	3				X		
W	6/17/08	1410		X	TRB-211-062008	2				X		
W	6/17/08	1415		X	SP-012-062008	3				X		
W	6/17/08	1430		X	SP-009-062008	3				X		
W	6/17/08	1440		X	SP-008-062008	3				X		
W	6/17/08	1450		X	SP-007-062008	3				X		
W	6/17/08	1500		X	SP-006-062008	3				X		
W	6/17/08	1515		X	SP-016-062008	3				X		
W	6/17/08	1525		X	SP-010-062008	3				X		
W	6/17/08	1540		X	SP-013-062008	3				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	6/19/08	1730	8634 7969 0922	6/19/08	1730
			[signature]	6/20/08	0950

Remarks

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

2nd Quarter SEEP Sampling Event
Mead-Fnop.
2/4

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd Bldg 2 Suite 350 Lakewood Co. 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Ralph West
Sampler's Signature: [signature]

Proj. No.: 5403.001
Project Name: Mead-Fnop

ANALYSIS REQUESTED: 8260B (NeVE) 8330 EXP IDE

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	8260B 8330	Lab/Sample ID (Lab Use Only)
W	6/17/08	1555		X	SP-017-062008	3				X	
W	6/17/08	1610		X	SP-018-062008	3				X	
W	6/17/08	1620		X	SP-014-062008	3				X	
W	6/17/08	1630		X	SP-019-062008	3				X	
W	6/17/08	1630		X	SP-019-062008 MS	3				X	
W	6/17/08	1630		X	SP-019-062008 MSD	3				X	
W	6/17/08	1640		X	SP-015-062008	3				X	
W	6/17/08	1700		X	SP-020-062008	3				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	6/19/08	1730	FedEx 8634 7969 0922	6/19/08	1730
Relinquished by: (Signature)	Date	Time	Received by: (Signature) [signature]	6/20/08	0950
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8254(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

2nd Qtr Seep Sampling Event
3/4

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 COLE BLVD, BLDG 21 S350 LAKEWOOD, CO 80401	Address:
Contact: JOHN RYDER	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7827	Fax:
Contract/ Quote:	

Sampler's Name: ERIK J. WAISS
Sampler's Signature:

Proj. No.: 5403.001
Project Name: MEAD FNOP

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] HCl VOA	A/G 1 Lt.	250 ml	P/O	8260B	Lab/Sample ID (Lab Use Only)
~~W~~	6-18-2008	13 00		X	~~DT-001-062008~~	~~3~~				~~X~~	
W	6-18-2008	12 55		X	DT-002-062008	3				X	
W	6-18-2008	13 10		X	DT-003-062008	3				X	
W	6-18-2008	13 30		X	DT-007-062008	3				X	
W	6-18-2008	14 00		X	DT-011-062008	3				X	
W	6-18-2008	14 45		X	DT-013-062008	3				X	
W	6-18-2008	15 30		X	DT-017-062008	3				X	
W	6-18-2008	15 30		X	DT-217-062008	3				X	
W	6-18-2008	15 00		X	DT-015-062008	3				X	
W	6-18-2008	14 10		X	DT-012-062008	3				X	

Lab Use Only
Due Date:

Temp. of coolers when received (C°):

1	2	3	4	5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	6/19/08	1730	Fedex 8634 7969 0922	6/19/08	1730
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
				6/20/2008	0950
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

2nd Qtr Seep Sampling Event

4/4

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 COLE BLVD, BLDG 21 S 350 LAKEWOOD, CO 80401	Address:
Contact: JOHN RYDER	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7827	Fax:
Contract/ Quote:	

Sampler's Name: ERIK J. WAISS

Sampler's Signature:

Proj. No.: 5403.001

Project Name: MEAD FNOP

ANALYSIS REQUESTED: 8260B

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y

Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] HCl VOA	A/G 1 Lt.	250 ml	P/O	Lab/Sample ID (Lab Use Only)
W	6-18-2008	15 00		X	DT-215-062008	3				X
W	6-18-2008	15 15		X	SP-001-062008	3				X
W	6-19-2008	13 15		X	DT-001-062008	3				X
W	6-19-2008	13 15		X	DT-001-062008MS	3				X
W	6-19-2008	13 15		X	DT-001-062008MSD	3				X
W	6-19-2008	13 10		X	DT-002-062008	3				X
W	6-19-2008	13 10		X	DT-002-062008MS	3				X
W	6-19-2008	13 10		X	DT-002-062008MSD	3				X
W	6-19-2008	13 10		X	DT-202-062008 ##	3				X

	Date	Time		Date	Time	Remarks
Relinquished by: (Signature)	6/19/08	1730	Received by: (Signature) 8637969 Fedex 0922	6/19/08	1930	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	6/20/08	0950	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil

[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

Appendix B
Field Notes

54

Location MEAD FNOP Date 6-18-08

Project / Client DRAINTILE SAMPLING / USACE

CoRd F & Johnson Creek

12:50 - ERIK WEISS (ASW) MATT LONG (ECC) AT BRIDGE NEAR DT-01, WILL SAMPLE & MOVE NORTH.

13:00 - SAMPLED DT-02 (WEST SIDE) & DT-01 (EAST SIDE) 19+GPM

13:15 - SAMPLED DT-03 (WEST), DT-04 NOT FLOWING.

13:30 - DT-05+06 NO FLOW, SAMPLING DT-07 50+GPM

13:35 - DT-08 NO FLOW. 05, 06, 07 + 08 ALL WEST SIDE.

13:40 - DT-09 (EAST SIDE) NO FLOW.

13:50 - DT-10 (EAST) NO FLOW.

14:00 - DT-11 (WEST) FLOWING 10+GPM, SAMPLED

15:00 - DT-13 (WEST) ~5GPM & DT-15 (WEST) >100 GPM SAMPLED.

15:40 - DT-17 (WEST) ~10GPM SAMPLED W/ QA/QC. DT-18 IS UNDERWATER, NO SAMPLE.

15:55 - DT-19 NO FLOW. DT-20 NO FLOW SEEPS 3+4 UNDERWATER

16:05 - DT-21 NO FLOW

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D
Analytical Results on Compact Disc Summary Forms and Raw Data

QUALITY CONTROL SUMMARY REPORT

Second Quarter 2008
Water Supply Well Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

Prepared for

U.S. Army Corps of Engineers
Kansas City Districts

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Quality Control Summary Report
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant
Mead, Nebraska

1.0 INTRODUCTION

Water supply well (WSW) sampling was conducted by ECC as contracted by the U.S. Army Corps of Engineers (USACE), Kansas City District on June 25, 2008 at the former Nebraska Ordnance Plant, Mead, Nebraska. ECC performed all sampling activities in accordance with the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) of the *Work Plan and Sampling and Analysis Plan for Water Supply Wells* (ECC, 2006). This QCSR presents a summary of the chemical data quality review for the Second Quarter 2008 WSW sampling event.

Samples were analyzed for one or all of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Drinking Water Method 524.2
- Explosives by EPA Method 8330

All analyses were performed by TestAmerica of South Burlington, Vermont. .

A complete list of the water supply wells planned for sample collection, the corresponding sample identification (ID) numbers, and the requested analyses for each sampled well are presented in Table 1-1. Associated Chain of Custody (COC) Records are included as Appendices A. Appendix B presents an explanation of data validation qualifiers and drinking water standards and Appendix C contains a CD with all analytical data, including summary forms and raw data, for the Second Quarter 2008 WSW sampling event.

2.0 SAMPLING ACTIVITIES

One location was sampled for chemical analyses during the Second Quarter 2008 WSW sampling event. In addition, a field duplicate sample, a matrix spike (MS) / matrix spike duplicate (MSD) sample pair, and one trip blank were collected.

Table 2-1 provides the following information listed by date sampled and laboratory sample ID for ease of comparison to laboratory data packages and field notes:

- A cross-reference between laboratory sample IDs and field sample IDs;
- QC (Quality Control) split sample information;
- MS/MSD sample information;
- Dates of sample collection and sample receipt by the laboratory;
- COC numbers;
- Sample delivery group (SDG) numbers; and

- Requested analyses

3.0 ANALYTICAL RESULTS

Summaries of the analytical results are presented in Table 3-1 (VOCs) and Table 3-2 (explosives). Field duplicate results are presented in Table 3-3 (VOCs) and Table 3-4 (explosives). Trip blank results are presented in Table 3-5. The data in Tables 3-1 through 3-5 are presented by field sample ID, as listed in Table 1-1.

[Note there were ultimately no detected results reported for the Second Quarter 2008 WSW sampling event. See laboratory blank detections.]

4.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present the data quality evaluation procedures performed in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007) and the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001). Laboratory control limits were used to assess data quality. Table 4-1 presents all qualifications. QC outliers for the explosives are presented in Tables 4-2 (no outliers were identified for the VOC analyses).

4.1 Sample Receipt at the Laboratory

All sample transfer requirements were met for samples received at the laboratory. No data required qualification based on sample condition. The samples were properly preserved and the sample coolers were received within the recommended temperature range of 4 ± 2 °C.

4.2 Holding Times

All extractions and analyses were performed within method-specific holding times.

4.3 Tuning and Calibration

According to the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), assessment of tune and calibration information is assessed using the laboratory case-narrative or summary forms. No deviations from method or Laboratory Quality Management Plan (LQMP) specifications for the calibration and tuning of pertinent instrumentation were reported by the laboratory in the project-specific case narrative and evaluation of the calibration summary forms indicated that all criteria were met.

4.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank. For common laboratory contaminants, detections are qualified as non-detect (U) if the concentration in the sample is less than 10 times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

4-Amino-2,6-dinitrotoluene was detected in explosive method blank AMBLK063008 at 0.060 ug/L. As a result of this detection, the following detected results were qualified as non-detected (U):

- 4-Amino-2,6-dinitrotoluene in samples 055-062008 and 255-062008

See Table 4-2 for the Explosive QC outliers. Results qualified as non-detected did not effect analytical completeness percentages.

4.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than five times the concentration in the associated blank (ten time for common laboratory contaminants). Sample results that are either non-detect (U), or greater than five times the blank result do not require qualification.

The VOC trip blank, sample TRB-255-062008, reported a detected result for acetone at 1.0 ug/L. No action was required because acetone was not detected in the associated samples.

Trip blank results are presented in Table 3-5.

4.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample. Surrogates were analyzed for each sample batch for VOCs and explosives.

All VOC and explosive samples were spiked with appropriate surrogate compounds. All % RECs were within laboratory QC limits.

4.7 Laboratory Control Samples and Laboratory Control Sample Duplicates

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS/LCSD RPD exceeds 30%.

The LCS/LSCD % RECs for bromomethane exceeded the laboratory QC limits for QC batch LA070208. No action was required for the elevated LCS % RECs as bromomethane was not detected in the associated samples.

All remaining LCS/LCSD % RECs were within laboratory QC limits and all other RPDs were less than 30%.

4.8 Matrix Spikes and Matrix Spike Duplicates

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the unspiked portion of the sample for % REC of the spiked analytes. MS/MSD samples were analyzed for each SDG for all analyses. MS/MSD results were provided for both analyses.

As requested on the COC, MS/MSD analyses were performed on sample 055-062008. All % RECs and relative percent differences (RPDs) were within laboratory QC limits.

4.9 Field Duplicates

Field duplicate analytical results provide information on the ability to reproduce field results and account for error introduced from handling, shipping, preparing, and analyzing field samples.

The field duplicate pair is listed below:

- 055-062008 / 255-062008 (VOC and explosive)

In accordance with the *Data Quality Evaluation Guidance, USACE CENWK-EC-EF* (USACE, 2001) and the *Mead Validation Guidelines*, (ECC, 2007, approved by USACE 2007), data are not qualified based on field duplicate sample results. Results within a factor of two of each other were considered to be in agreement. Results between a factor of two to three of each other were considered a minor discrepancy, and results greater than a factor of three were considered a major discrepancy.

All field duplicate results were within a factor of two of each other.

Field duplicate results are presented in Table 3-3 (VOCs) and Table 3-4 (explosives).

4.10 Dilutions and Reanalyses

No secondary dilutions or reanalyses were required or performed for this Second Quarter 2008 WSW sampling event.

4.11 Other QC Parameters

A column comparison between the detected explosive results was made using explosive identification summary forms. The validator confirmed all reported explosives detections and column RPDs.

Although the RPDs for 4-amino-2,6-dinitrotoluene in samples 055-062008 and 255-062008 exceeded 40%, no qualifiers were assigned for the elevated RPDs. These results were ultimately qualified as non-detects due to a method blank detection.

4.12 Laboratory Qualifiers

Analytes detected below the quantitation limit, but above the lowest level of detection were quantified and results were assigned an estimated (J) qualifier by the laboratory.

Although samples 055-062008 and 255-062008 reported detected results for 4-amino-2,6-dinitrotoluene below the reporting limit and were flagged "J" by the laboratory, the results were ultimately qualified as non-detects due to a method blank detection.

5.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the Second Quarter 2008 WSW sampling event. All completeness goals are established in the Mead WSW QAPP (ECC, 2006).

5.1 Field Completeness

Field completeness for sample collection was assessed by comparing the number of samples properly collected to the number of samples planned for collection. Only one sample location (WSW-055) was scheduled for VOC and explosive analysis sampling this quarter. This sample location along with the appropriate QC samples were collected as requested. Therefore the field completeness for the VOCs and the field completeness for the explosives is 100%. The overall field completeness percentage is 100%, which meets the field completeness goal of 95%.

Section 2.0 presents the field sampling activities. Table 5-1 presents the field completeness.

5.2 Analytical Completeness

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that has not been rejected or qualified as estimated (J). Qualified data is considered acceptable if appropriate corrective actions were taken by the laboratory. The acceptable data completeness percentage for VOCs was 100% and for the explosives was 100%. (Results qualified as non-detected did not effect analytical completeness percentages.) These all exceed the acceptable data completeness goals of 90% for each analytical method. Overall acceptable data completeness is also 100%, which is above the overall acceptable data completeness goal of 95%.

Quality data is a measure of the percentage of usable data. Quality data includes all data except rejected data points, and does not include analyses for which replacement data points are available. Quality data completeness percentages for VOCs and explosives are 100%, which exceeds the quality data completeness goals of 80% for each analytical method. Overall quality data completeness is 100%, which exceeds the overall quality data completeness goal of 80%.

Table 5-2 presents acceptable and quality data completeness.

5.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/ measurements planned. Project completeness is calculated using the field completeness and analytical completeness (quality data) completeness percentages. Overall project completeness is 100%. The overall project completeness exceeds the project completeness goal of 90% established in the Mead WSW QAPP (ECC, 2006).

Table 5-3 presents the project completeness percentages.

6.0 CONCLUSIONS

No data points were qualified as rejected (R). Overall quality data completeness is 100%. Overall acceptable data completeness is 100% and over all field completeness is 100%, both of which meet project goals. The overall project completeness at 100% meets the project goal of 90%. Data are valid for use as qualified.

7.0 REFERENCES

Environmental Chemical Corporation (ECC), 2006, *Work Plan and Sampling and Analysis Plan for Water Supply Wells.*

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007)

USACE, 2001, *Data Quality Evaluation Guidance*, USACE CENWK-EC-EF, July.

Tables

Table 1-1
Sample Locations, Sample IDs, and Analyses
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Well IDs	Sample IDs	Analyses[1]
WSW-055	055-062008	Volatiles, Explosives

Notes:

IDs = Identifications

[1] = VOCs by Environmental Protection Agency (EPA) Drinking Water Method 524.2, Explosives by EPA SW-846 Method 8330.

Table 2-1
Sample Collection Summary
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	Quality Control Samples	MS/MSD Samples	Date Sampled	Date Received by Lab	COC Record Number	Lab ID	SDG	Analyses	
								VOCs	Explosives
Field Samples									
055-062008			6/25/2008	6/26/2008	None	757813	126250	•	•
		055-062008MS	6/25/2008	6/26/2008	None	757813MS	126250	•	•
		055-062008MSD	6/25/2008	6/26/2008	None	757813MD	126250	•	•
	255-062008		6/25/2008	6/26/2008	None	757815	126250	•	•
Trip Blanks									
TRB-255-062008			6/25/2008	6/26/2008	None	757814	126250	•	

Notes:

• = Requested for the indicated analyses.
COC = Chain of Custody Record
ID = Identification
Lab = Laboratory
MS/MSD = Matrix Spike / Matrix Spike Duplicate
SDG = Sample Delivery Group
VOCs = Volatile Organic Compounds

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:		WSW-055	WSW-055
Field Sample ID:		055-062008	255-062008
Lab Sample ID:		757813	757815
Lab Name:		TALVT	TALVT
Sample Date:		6/25/2008	6/25/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
1,1-Dichloroethane	ug/l	0.5 U	0.5 U
1,1-Dichloroethene	ug/l	0.5 U	0.5 U
1,1-Dichloropropene	ug/l	0.5 U	0.5 U
1,1,1-Trichloroethane	ug/l	0.5 U	0.5 U
1,1,1,2-Tetrachloroethane	ug/l	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	ug/l	0.5 U	0.5 U
1,1,2-Trichloroethane	ug/l	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	ug/l	0.5 U	0.5 U
1,2-Dibromoethane	ug/l	0.5 U	0.5 U
1,2-Dichlorobenzene	ug/l	0.5 U	0.5 U
1,2-Dichloroethane	ug/l	0.5 U	0.5 U
1,2-Dichloropropane	ug/l	0.5 U	0.5 U
1,2,3-Trichlorobenzene	ug/l	0.5 U	0.5 U
1,2,3-Trichloropropane	ug/l	0.5 U	0.5 U
1,2,4-Trichlorobenzene	ug/l	0.5 U	0.5 U
1,3-Dichlorobenzene	ug/l	0.5 U	0.5 U
1,3-Dichloropropane	ug/l	0.5 U	0.5 U
1,3,5-Trimethylbenzene	ug/l	0.5 U	0.5 U
1,4-Dichlorobenzene	ug/l	0.5 U	0.5 U
2-Butanone	ug/l	5 U	5 U
2-Chlorotoluene	ug/l	0.5 U	0.5 U
2-Hexanone	ug/l	2.5 U	2.5 U
2,2-Dichloropropane	ug/l	0.5 U	0.5 U
4-Chlorotoluene	ug/l	0.5 U	0.5 U
Acetone	ug/l	5 U	5 U
Benzene	ug/l	0.5 U	0.5 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:	WSW-055	WSW-055
Field Sample ID:	055-062008	255-062008
Lab Sample ID:	757813	757815
Lab Name:	TALVT	TALVT
Sample Date:	6/25/2008	6/25/2008
Field QC:	Original Sample	Field Duplicate
Analysis Information:	I 1	I 1

VOCs	Units		
Bromobenzene	ug/l	0.5 U	0.5 U
Bromochloromethane	ug/l	0.5 U	0.5 U
Bromodichloromethane	ug/l	0.5 U	0.5 U
Bromoform	ug/l	0.5 U	0.5 U
Bromomethane	ug/l	0.5 U	0.5 U
Carbon disulfide	ug/l	0.5 U	0.5 U
Carbon tetrachloride	ug/l	0.5 U	0.5 U
Chlorobenzene	ug/l	0.5 U	0.5 U
Chloroethane	ug/l	0.5 U	0.5 U
Chloroform	ug/l	0.5 U	0.5 U
Chloromethane	ug/l	0.5 U	0.5 U
cis-1,2-Dichloroethene	ug/l	0.5 U	0.5 U
cis-1,3-Dichloropropene	ug/l	0.5 U	0.5 U
Dibromochloromethane	ug/l	0.5 U	0.5 U
Dibromomethane	ug/l	0.5 U	0.5 U
Dichlorodifluoromethane	ug/l	0.5 U	0.5 U
Ethylbenzene	ug/l	0.5 U	0.5 U
Hexachlorobutadiene	ug/l	0.5 U	0.5 U
Isopropylbenzene	ug/l	0.5 U	0.5 U
Methyl tert butyl ether	ug/l	0.5 U	0.5 U
Methylene chloride	ug/l	0.5 U	0.5 U
m,p-Xylene	ug/l	0.5 U	0.5 U
Naphthalene	ug/l	0.5 U	0.5 U
n-Butylbenzene	ug/l	0.5 U	0.5 U
n-Propylbenzene	ug/l	0.5 U	0.5 U
o-Xylene	ug/l	0.5 U	0.5 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:		WSW-055	WSW-055
Field Sample ID:		055-062008	255-062008
Lab Sample ID:		757813	757815
Lab Name:		TALVT	TALVT
Sample Date:		6/25/2008	6/25/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
p-Isopropyltoluene	ug/l	0.5 U	0.5 U
Styrene	ug/l	0.5 U	0.5 U
tert-Butylbenzene	ug/l	0.5 U	0.5 U
Tetrachloroethene	ug/l	0.5 U	0.5 U
Toluene	ug/l	0.5 U	0.5 U
trans-1,2-Dichloroethene	ug/l	0.5 U	0.5 U
trans-1,3-Dichloropropene	ug/l	0.5 U	0.5 U
Trichloroethene	ug/l	0.5 U	0.5 U
Trichlorofluoromethane	ug/l	0.5 U	0.5 U
Vinyl chloride	ug/l	0.5 U	0.5 U
Xylene (Total)	ug/l	0.5 U	0.5 U

Table 3 - 1
Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:		WSW-055	WSW-055
Field Sample ID:		055-062008	255-062008
Lab Sample ID:		757813	757815
Lab Name:		TALVT	TALVT
Sample Date:		6/25/2008	6/25/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
Explosives	**Units**		
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.051 U	0.053 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U
HMX	ug/l	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U
RDX	ug/l	0.25 U	0.25 U
Tetryl	ug/l	0.25 U	0.25 U

Table 3 - 2
Results - Explosive Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:		WSW-055	WSW-055
Field Sample ID:		055-062008	255-062008
Lab Sample ID:		757813	757815
Lab Name:		TALVT	TALVT
Sample Date:		6/25/2008	6/25/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
1,1-Dichloroethane	ug/l	0.5 U	0.5 U
1,1-Dichloroethene	ug/l	0.5 U	0.5 U
1,1-Dichloropropene	ug/l	0.5 U	0.5 U
1,1,1-Trichloroethane	ug/l	0.5 U	0.5 U
1,1,1,2-Tetrachloroethane	ug/l	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	ug/l	0.5 U	0.5 U
1,1,2-Trichloroethane	ug/l	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	ug/l	0.5 U	0.5 U
1,2-Dibromoethane	ug/l	0.5 U	0.5 U
1,2-Dichlorobenzene	ug/l	0.5 U	0.5 U
1,2-Dichloroethane	ug/l	0.5 U	0.5 U
1,2-Dichloropropane	ug/l	0.5 U	0.5 U
1,2,3-Trichlorobenzene	ug/l	0.5 U	0.5 U
1,2,3-Trichloropropane	ug/l	0.5 U	0.5 U
1,2,4-Trichlorobenzene	ug/l	0.5 U	0.5 U
1,3-Dichlorobenzene	ug/l	0.5 U	0.5 U
1,3-Dichloropropane	ug/l	0.5 U	0.5 U
1,3,5-Trimethylbenzene	ug/l	0.5 U	0.5 U
1,4-Dichlorobenzene	ug/l	0.5 U	0.5 U
2-Butanone	ug/l	5 U	5 U
2-Chlorotoluene	ug/l	0.5 U	0.5 U
2-Hexanone	ug/l	2.5 U	2.5 U
2,2-Dichloropropane	ug/l	0.5 U	0.5 U
4-Chlorotoluene	ug/l	0.5 U	0.5 U
Acetone	ug/l	5 U	5 U
Benzene	ug/l	0.5 U	0.5 U

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:	WSW-055	WSW-055
Field Sample ID:	055-062008	255-062008
Lab Sample ID:	757813	757815
Lab Name:	TALVT	TALVT
Sample Date:	6/25/2008	6/25/2008
Field QC:	Original Sample	Field Duplicate
Analysis Information:	I 1	I 1

VOCs	Units		
Bromobenzene	ug/l	0.5 U	0.5 U
Bromochloromethane	ug/l	0.5 U	0.5 U
Bromodichloromethane	ug/l	0.5 U	0.5 U
Bromoform	ug/l	0.5 U	0.5 U
Bromomethane	ug/l	0.5 U	0.5 U
Carbon disulfide	ug/l	0.5 U	0.5 U
Carbon tetrachloride	ug/l	0.5 U	0.5 U
Chlorobenzene	ug/l	0.5 U	0.5 U
Chloroethane	ug/l	0.5 U	0.5 U
Chloroform	ug/l	0.5 U	0.5 U
Chloromethane	ug/l	0.5 U	0.5 U
cis-1,2-Dichloroethene	ug/l	0.5 U	0.5 U
cis-1,3-Dichloropropene	ug/l	0.5 U	0.5 U
Dibromochloromethane	ug/l	0.5 U	0.5 U
Dibromomethane	ug/l	0.5 U	0.5 U
Dichlorodifluoromethane	ug/l	0.5 U	0.5 U
Ethylbenzene	ug/l	0.5 U	0.5 U
Hexachlorobutadiene	ug/l	0.5 U	0.5 U
Isopropylbenzene	ug/l	0.5 U	0.5 U
Methyl tert butyl ether	ug/l	0.5 U	0.5 U
Methylene chloride	ug/l	0.5 U	0.5 U
m,p-Xylene	ug/l	0.5 U	0.5 U
Naphthalene	ug/l	0.5 U	0.5 U
n-Butylbenzene	ug/l	0.5 U	0.5 U
n-Propylbenzene	ug/l	0.5 U	0.5 U
o-Xylene	ug/l	0.5 U	0.5 U

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:		WSW-055	WSW-055
Field Sample ID:		055-062008	255-062008
Lab Sample ID:		757813	757815
Lab Name:		TALVT	TALVT
Sample Date:		6/25/2008	6/25/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
VOCs	**Units**		
p-Isopropyltoluene	ug/l	0.5 U	0.5 U
Styrene	ug/l	0.5 U	0.5 U
tert-Butylbenzene	ug/l	0.5 U	0.5 U
Tetrachloroethene	ug/l	0.5 U	0.5 U
Toluene	ug/l	0.5 U	0.5 U
trans-1,2-Dichloroethene	ug/l	0.5 U	0.5 U
trans-1,3-Dichloropropene	ug/l	0.5 U	0.5 U
Trichloroethene	ug/l	0.5 U	0.5 U
Trichlorofluoromethane	ug/l	0.5 U	0.5 U
Vinyl chloride	ug/l	0.5 U	0.5 U
Xylene (Total)	ug/l	0.5 U	0.5 U

Table 3 - 3
Field Duplicate Results - Volatile Organic Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 4
Field Duplicate Results - Explosive Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:		WSW-055	WSW-055
Field Sample ID:		055-062008	255-062008
Lab Sample ID:		757813	757815
Lab Name:		TALVT	TALVT
Sample Date:		6/25/2008	6/25/2008
Field QC:		Original Sample	Field Duplicate
Analysis Information:		I 1	I 1
Explosives	**Units**		
1,3-Dinitrobenzene	ug/l	0.25 U	0.25 U
1,3,5-Trinitrobenzene	ug/l	0.25 U	0.25 U
2-Amino-4,6-Dinitrotoluene	ug/l	0.25 U	0.25 U
2-Nitrotoluene	ug/l	0.25 U	0.25 U
2,4-Dinitrotoluene	ug/l	0.25 U	0.25 U
2,4,6-Trinitrotoluene	ug/l	0.25 U	0.25 U
2,6-Dinitrotoluene	ug/l	0.25 U	0.25 U
3-Nitrotoluene	ug/l	0.25 U	0.25 U
4-Amino-2,6-Dinitrotoluene	ug/l	0.051 U	0.053 U
4-Nitrotoluene	ug/l	0.25 U	0.25 U
HMX	ug/l	0.25 U	0.25 U
Nitrobenzene	ug/l	0.25 U	0.25 U
RDX	ug/l	0.25 U	0.25 U
Tetryl	ug/l	0.25 U	0.25 U

Table 3 - 4
Field Duplicate Results - Explosive Compounds
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl = Methyl-2,4,6-trinitrophenylnitramine

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 3 - 5
Trip Blank Results
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:	Trip Blank
Field Sample ID:	TRB-255-062008
Lab Sample ID:	757814
Lab Name:	TALVT
Sample Date:	6/25/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
1,1-Dichloroethane	ug/l	0.5 U
1,1-Dichloroethene	ug/l	0.5 U
1,1-Dichloropropene	ug/l	0.5 U
1,1,1-Trichloroethane	ug/l	0.5 U
1,1,1,2-Tetrachloroethane	ug/l	0.5 U
1,1,2,2-Tetrachloroethane	ug/l	0.5 U
1,1,2-Trichloroethane	ug/l	0.5 U
1,2-Dibromo-3-chloropropane	ug/l	0.5 U
1,2-Dibromoethane	ug/l	0.5 U
1,2-Dichlorobenzene	ug/l	0.5 U
1,2-Dichloroethane	ug/l	0.5 U
1,2-Dichloropropane	ug/l	0.5 U
1,2,3-Trichlorobenzene	ug/l	0.5 U
1,2,3-Trichloropropane	ug/l	0.5 U
1,2,4-Trichlorobenzene	ug/l	0.5 U
1,3-Dichlorobenzene	ug/l	0.5 U
1,3-Dichloropropane	ug/l	0.5 U
1,3,5-Trimethylbenzene	ug/l	0.5 U
1,4-Dichlorobenzene	ug/l	0.5 U
2-Butanone	ug/l	5 U
2-Chlorotoluene	ug/l	0.5 U
2-Hexanone	ug/l	2.5 U
2,2-Dichloropropane	ug/l	0.5 U
4-Chlorotoluene	ug/l	0.5 U
Acetone	ug/l	1.0 J
Benzene	ug/l	0.5 U

Table 3 - 5
Trip Blank Results
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:	Trip Blank
Field Sample ID:	TRB-255-062008
Lab Sample ID:	757814
Lab Name:	TALVT
Sample Date:	6/25/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
Bromobenzene	ug/l	0.5 U
Bromochloromethane	ug/l	0.5 U
Bromodichloromethane	ug/l	0.5 U
Bromoform	ug/l	0.5 U
Bromomethane	ug/l	0.5 U
Carbon disulfide	ug/l	0.5 U
Carbon tetrachloride	ug/l	0.5 U
Chlorobenzene	ug/l	0.5 U
Chloroethane	ug/l	0.5 U
Chloroform	ug/l	0.5 U
Chloromethane	ug/l	0.5 U
cis-1,2-Dichloroethene	ug/l	0.5 U
cis-1,3-Dichloropropene	ug/l	0.5 U
Dibromochloromethane	ug/l	0.5 U
Dibromomethane	ug/l	0.5 U
Dichlorodifluoromethane	ug/l	0.5 U
Ethylbenzene	ug/l	0.5 U
Hexachlorobutadiene	ug/l	0.5 U
Isopropylbenzene	ug/l	0.5 U
Methyl tert butyl ether	ug/l	0.5 U
Methylene chloride	ug/l	0.5 U
m,p-Xylene	ug/l	0.5 U
Naphthalene	ug/l	0.5 U
n-Butylbenzene	ug/l	0.5 U
n-Propylbenzene	ug/l	0.5 U
o-Xylene	ug/l	0.5 U

Table 3 - 5
Trip Blank Results
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Site Name: Mead Water Supply Wells

Station ID:	Trip Blank
Field Sample ID:	TRB-255-062008
Lab Sample ID:	757814
Lab Name:	TALVT
Sample Date:	6/25/2008
Field QC:	Trip Blank
Analysis Information:	I 1

VOCs	Units	
p-Isopropyltoluene	ug/l	0.5 U
Styrene	ug/l	0.5 U
tert-Butylbenzene	ug/l	0.5 U
Tetrachloroethene	ug/l	0.5 U
Toluene	ug/l	0.5 U
trans-1,2-Dichloroethene	ug/l	0.5 U
trans-1,3-Dichloropropene	ug/l	0.5 U
Trichloroethene	ug/l	0.5 U
Trichlorofluoromethane	ug/l	0.5 U
Vinyl chloride	ug/l	0.5 U
Xylene (Total)	ug/l	0.5 U

Table 3 - 5
Trip Blank Results
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Notes:

U = Not Detected: A result followed by a "U" qualifier means that the analyte was not detected at the given quantitation limit by the laboratory instrument.

J = Detected, Estimated: A result followed by a "J" qualifier means that the analyte was detected, but there is some question that the reported concentration is accurate. This may be because the analyte was detected below the quantitation limit, or because one or more quality control indicators did not meet acceptance criteria.

UJ = Not Detected, Estimated: A result followed by a "UJ" qualifier means that the analyte was not detected, but the associated quantitation limit is not certain (or estimated) because one or more laboratory quality control indicators did not meet acceptance criteria.

ug/l = micrograms per liter

TALVT = Test America Laboratories, Vermont

ID = Identification

QC = Quality Control

VOCs = Volatile Organic Compounds

I = Initial analysis

DL = Diluted analysis

"1" = Dilution factor

Table 4-1
Data Evaluation Results
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Laboratory Result		Data Review Qualifier	Reason for Qualification MB	Comments	Final Result
055-062008	6/25/2008	126250	757813	Explosives	4-Amino-2,6-dinitrotoluene	µg/L	0.051	J	U	x	Method blank	0.051 U
255-062008	6/25/2008	126250	757815	Explosives	4-Amino-2,6-dinitrotoluene	µg/L	0.053	J	U	x	Method blank	0.053 U

Notes:

J = Estimated
MB =Method Blank
µg/L = micrograms per liter
SDG = Sample Delivery Group
U = Non Detect
VOCs =Volatile Organic Compound

Table 4-2
Explosives Quality Control Outliers
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Parameter	Laboratory QC Parameter Control Limit	QC Result
Blanks (rinsate blank detections and method blank detections below the reporting limit do not affect data completeness)					
055-062008 255-062008	126250	4-Amino-2,6-dinitrotoluene	Method blank	ND	0.060 ug/L

Notes:

ID = Identification
ND = Non Detected
µg/L = micrograms per liter
QC = Quality Control
SDG = Sample Delivery Group

Table 5-1
Field Completeness
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned[1]	Number of Samples Collected	Field Completeness
Volatile Organic Compounds	2	2	100%
Explosives	2	2	100%
Totals =	4	4	100%
Goal =			95%

Notes:

[1] = Number of samples includes field samples and duplicate samples.

Table 5-2
Analytical Completeness
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters[1]	Acceptable Data[2]	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data[3]	Quality Data Completeness	Quality Data Completeness Goals
Volatile Organic Compounds (63)	126	126	100%	90%	126	100%	80%
Explosives (14)	28	28	100%	90%	28	100%	80%
Totals =	154	154	100%	95%	154	100%	80%

Notes:

[1] = Total number of parameters includes field samples (including data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates.

[2] = Acceptable data is defined as data that passed all quality control (QC) criteria, or data that did not pass QC criteria but had appropriate corrective actions taken. Acceptable data completeness is a measure of laboratory contract compliance. R qualified data with acceptable replacement data are not counted.

[3] = Quality data is a measure of the percentage of usable data points. Quality data includes all data except rejected data points.

Table 5-3
Project Completeness
Second Quarter 2008 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field[1]	Analytical[2]	Project Completeness[3]
100%	100%	100%
Project Completeness Goal =		90%

Notes:

[1] = Field completeness for sample collection was assessed by comparing the number of samples properly collected to the number of samples planned for collection.

[2] = Analytical completeness is the percentage of usable data (i.e. quality data completeness).

[3] = Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

2nd Qtr 2008 WSW SE

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd. Bld 21 st 350 Lakewood, CO 80401	Address:
Contact: John Ryder	Contact: SAME
Phone: 303-590-1157	Phone:
Fax:	Fax:
Contract/ Quote: 5403-001	

Sampler's Name: John Ryder
Sampler's Signature:

Proj. No.: 5403-001
Project Name: Mead FNOP
No/Type of Containers²: HCl/ice

ANALYSIS REQUESTED: 524.2 (VOCs) HCl/ice; 8330 (Explosives) ice

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Matrix¹	Date 2008	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	524.2	8330	Lab/Sample ID (Lab Use Only)
W	6/25	1000		X	055-062008	3	2			X	X	
W	6/25	1000		X	TRB-255-062008	2				X		
W	6/25	1005		X	255-062008	3	2			X	X	
W	6/25	1015		X	055-062008 MS	3	2			X	X	
W	6/25	1015		X	055-062008 MSD	3	2			X	X	

6/25/08

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	6/25/08	1500	Fed Ex	6/25/08	1600
FEDEX	06/26/08	0930		06/26/08	0930
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: 1 of 1
Fed Ex - 8653 4586 4040

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

¹Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
²Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

Appendix B
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix C
Analytical Results on Compact Disc Summary Forms and Raw Data